Labour market

2023

EMPLOYMENT OUTCOMES OF MASTER'S DEGREE GRADUATES OF CATALAN UNIVERSITIES

AQU CATALUNYA

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BARCELONA, 2023

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INTRODUCTION

This 2023 report presents the results of the fourth study on employment outcomes of university master's degree graduates of Catalan universities. These results include data and other indicators that AQU Catalunya makes available to university stakeholders in order to encourage them to reflect on and improve the programmes offered in the Catalan university system.

This new study on employment outcomes has once again benefited from the invaluable participation and support of the social councils of Catalonia's public and private universities. For the data collection, more than 15,000 master's degree graduates from the 2017-2018 and 2018-2019 academic years were successfully contacted and asked about the type of work they are doing, the quality of their employment, how satisfied they are with their education and other important issues. Almost 4 out of 10 graduates responded to this year's survey. Details of the sample can be found in the data sheet at the end of the report. With the surveys conducted to date, we have over 40,000 total responses in our database. This is valuable information for analysing the employment outcomes of master's degree graduates of the Catalan university system.

Catalonia has a mature and well-developed master's degree landscape, with around 650 degrees offered each academic year and a growing trend towards e-learning. In fact, one in three of all master's degree graduates have completed their studies online.

Below is a brief summary of our findings, which must be interpreted in this context:

- Around 9 out of 10 master's degree graduates were employed at the time of the survey, and 6 out of 10 were performing specific functions related to their master's degree. Both of these results are an improvement on the already high percentages found in the 2020 survey. In addition, only 4% of graduates are unemployed and only 6% perform functions at work that are completely unsuited to their level of education.
- In terms of working conditions, contractual stability has improved significantly, which is likely due to the 2022 labour reform. Graduates' overall job satisfaction is considerably high, with an average score of 8 out of 10.
- The results vary significantly by field of knowledge. Humanities graduates have significantly weaker employment indicators (as do their counterparts in Sciences in some cases), while those in Engineering have top scores across the board. Employment and contractual stability have improved slightly overall in Humanities, but overqualification has worsened.
- Seventy-five per cent of survey respondents had more or less stable work experience before earning their master's degree, which facilitates access to the labour market after graduation, even for people under 30. This underlines the importance of making it easier for students to combine study and work at this level of education. Among those with previous work experience, almost two in three say that the master's degree had a positive impact on their career, particularly in terms of pay and professional category.
- With respect to satisfaction, the percentage of graduates who would choose the same master's degree again remains at 71%, although there are certain subfields where satisfaction is lower than in 2020. Half of those who would not choose the same master's degree again point to a lack of programme quality, which shows that there is room for improvement in course design and delivery.

- When asked about the skills they had acquired and how useful they were in the labour market, a significant number of respondents cited a lack of English proficiency, followed by oral and written expression.
- Finally, it is worth noting that 1 in 4 respondents are from countries other than Spain, who either came from abroad to study or studied online from abroad. This shows that Catalan universities play an important role in attracting talent. Interestingly, 32% of these graduates work in Spain three to four years after graduating.

This report is primarily based on information gathered through the graduate survey. In order to contextualise and benchmark the results, it also draws on data from the UNEIX Catalan University Information System, which is coordinated by the Secretariat for Universities and Research of the Government of Catalonia, and data from the Spanish National Statistics Institute (INE). We would like to thank these institutions for their collaboration, as well as the graduates who took part in the survey. Without their participation, this study would not have been possible.

We hope that this report will prove insightful to those wishing to gain a deeper understanding of the Catalan university system and its impact on the labour market. More importantly, we hope that the data and findings presented here will be used to improve master's degrees in Catalonia.

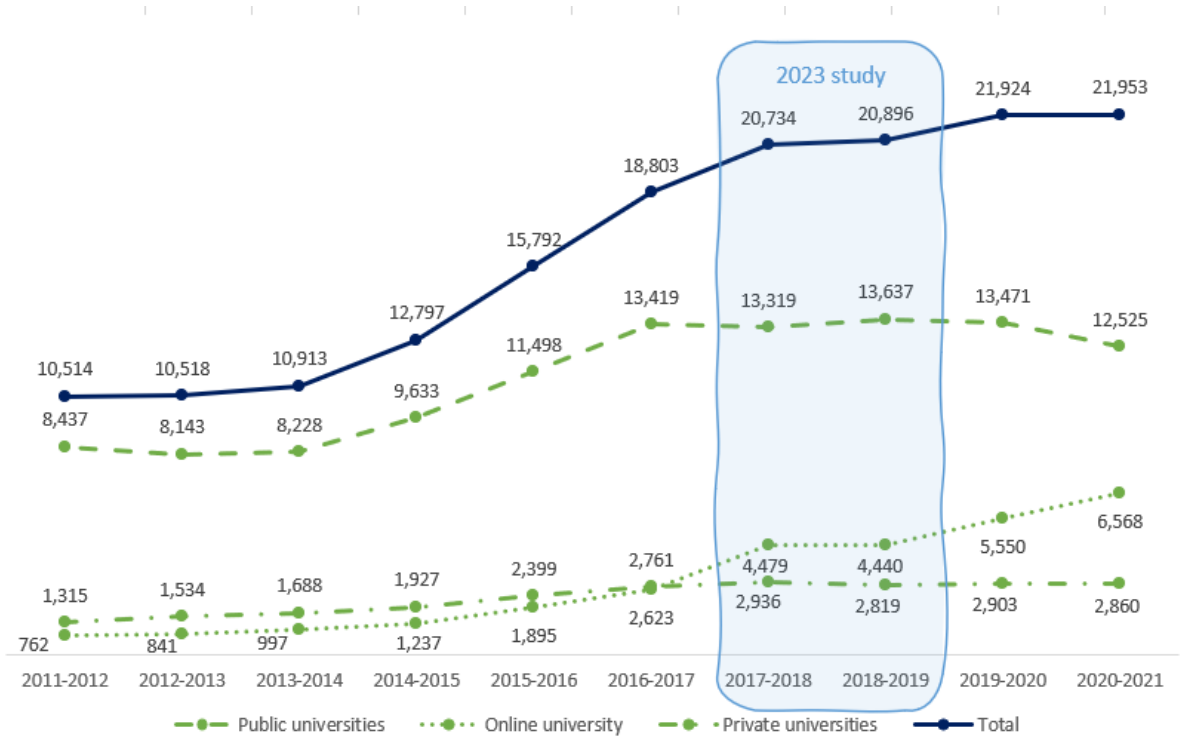
Jaume Valls Pasola, Director of AQU Catalunya

BACKGROUND DATA

Population data on Catalonia

> Trend in the number of master's degree graduates in Catalonia

Figure 1. Trend in the number of master's degree graduates by type of university



Note: Affiliated centres come under the university to which they are affiliated.

Source: UNEIX.

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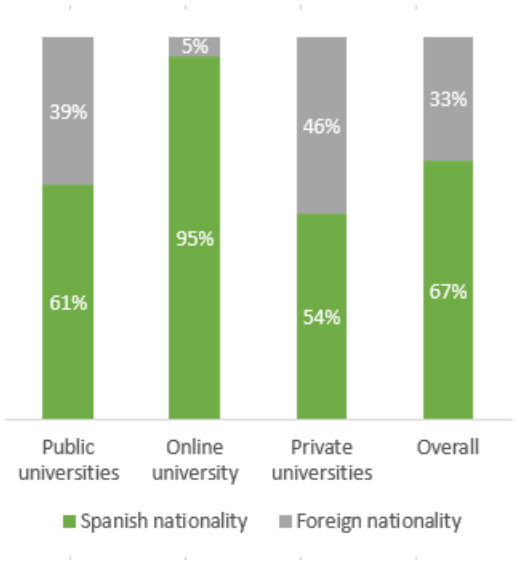
The number of master's degree graduates has levelled off in recent years at around 21,000 per academic year, and e-learning is clearly on the rise

- Since the creation of the European Higher Education Area (EHEA), postgraduate studies have become a well-established means for disciplinary and professional specialisation. Their growth was staggering between the 2013-2014 and 2017-2018 academic years, with the number of graduates doubling in just four years' time. In recent years, however, they have entered a phase of stabilisation or more moderate growth.
- Although more than half of master's degree graduates still come from public universities, their numbers have fallen in recent years, with online universities making up the difference.
- Today, nearly one in three master's degree graduates of Catalan universities are from the online university, which shows the considerable importance of e-learning at this level of education.

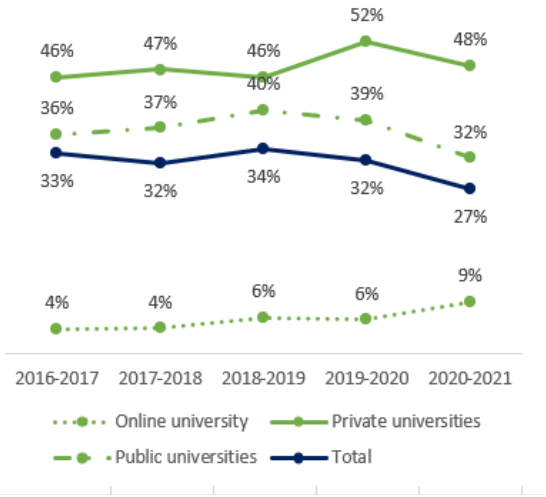
> Talent from Spain and abroad

Figure 2. Master's degree graduates by nationality and type of university (2017-2018 and 2018-2019 graduate cohorts)



Source: UNEIX.

Figure 3. Trend in the percentage of foreign master's degree graduates by type of university



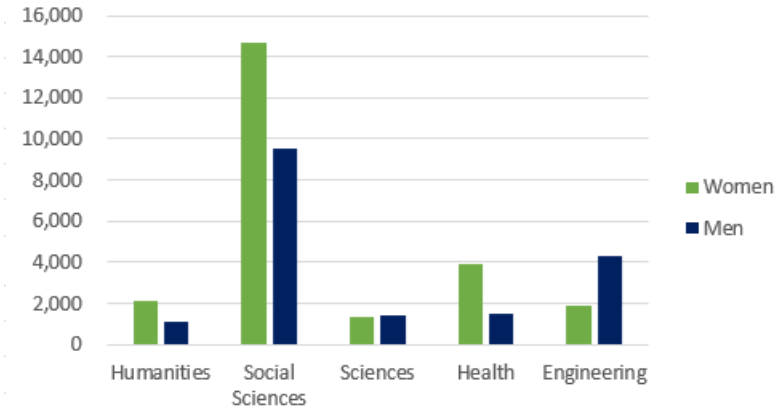
Source: UNEIX.

Around one in three master's degrees graduates from Catalan universities are of foreign nationality

- This proportion has decreased in recent years, particularly due to the decline in foreign students graduating from public universities.
- Interestingly, the proportion of foreign graduates is lowest at the online university. This means that the increase shown in Figure 1 is not necessarily explained by a greater attraction of students from other countries, but by a greater attraction of Spanish students opting for online degrees.

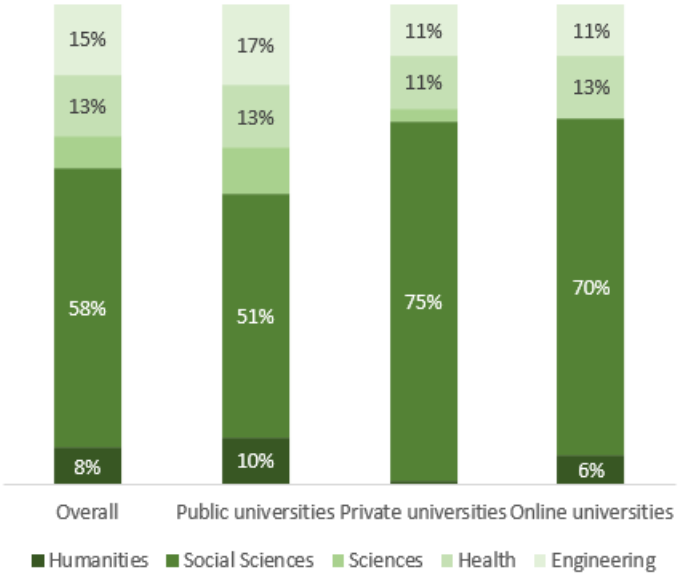
> Graduate distribution by field of knowledge

Figure 4. Master's degree graduates by field of knowledge and gender (2017-2018 and 2018-2019 graduate cohorts)



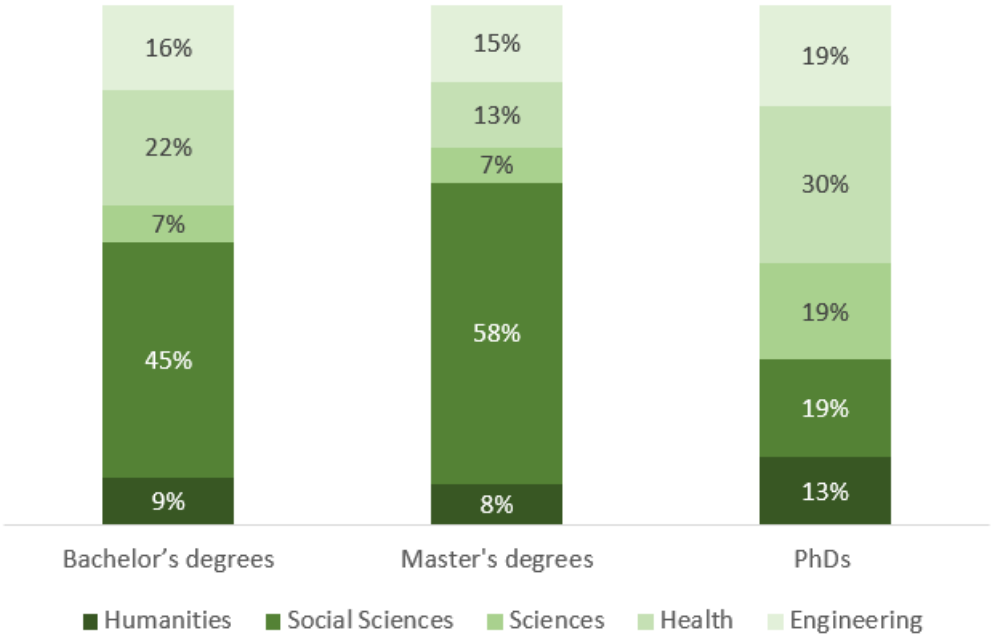
Source: UNEIX.

Figure 5. Master's degree graduates by field of knowledge and type of university (2017-2018 and 2018-2019 graduate cohorts)



Source: UNEIX.

Figure 6. Graduate population by field of knowledge and level of education (graduate cohorts participating in the survey)



Source: UNEIX.

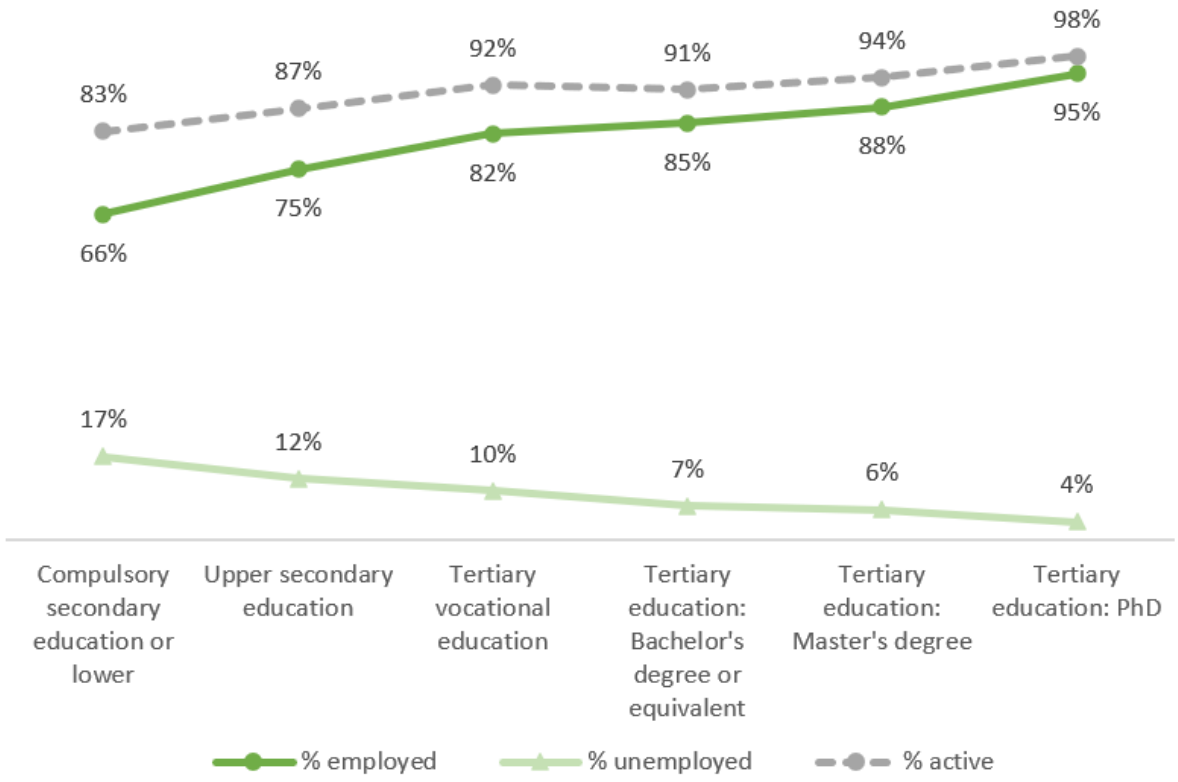
Master's degree graduates in Social Sciences account for more than half of the total

- In fact, a significant proportion of master's degree graduates (around 30%) earned degrees in the fields of business administration, education and law. This is particularly evident at the private universities and the online university.
- From a gender perspective, a significant proportion of master's degree graduates are women, accounting for 57% of the total. However, there is a clear gender divide between fields of knowledge. Women represent more than 65% of graduates in Health and Humanities, compared with only 30% in Engineering (proportions that have remained stable for at least the last ten years).
- At bachelor's and master's degree level, there are proportionately more graduates in Health and fewer in Social Sciences.

Economically Active Population Survey (EAPS, Spain)

> Employment outcomes by level of education

Figure 7. Percentage of the active population employed or unemployed by level of education (people aged 25 to 44 – EAPS, 1st quarter 2023)



Note: each indicator is calculated with regard to the total population at each level of education.

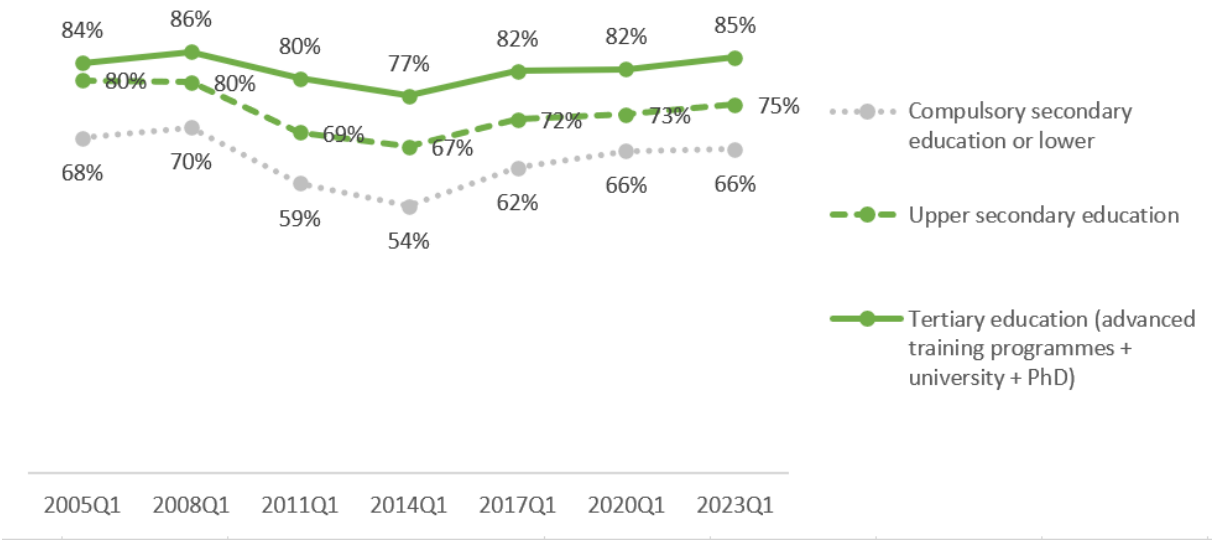
Source: National Statistics Institute (INE).

The higher the education level, the better the employment outcomes

- Completing tertiary education (vocational or university courses) clearly improves access to the labour market and employment and thus provides better protection against unemployment.
- By international comparison, Spain had an employment rate of 81% for 25- to 64-year-olds with tertiary education in 2021. This compares with an EU22 average of 87% and an OECD average of 85%. This rate is also far below that of neighbouring countries such as France (86%) and Portugal (90%) (OECD, 2022). The percentages of the same indicator by level of education are as follows:
    - Bachelor's degree or equivalent: Spain (80%), EU22 (84%).
    - Master's degree or equivalent: Spain (84%), EU22 (89%).
    - PhD or equivalent: Spain (87%), EU22 (93%).

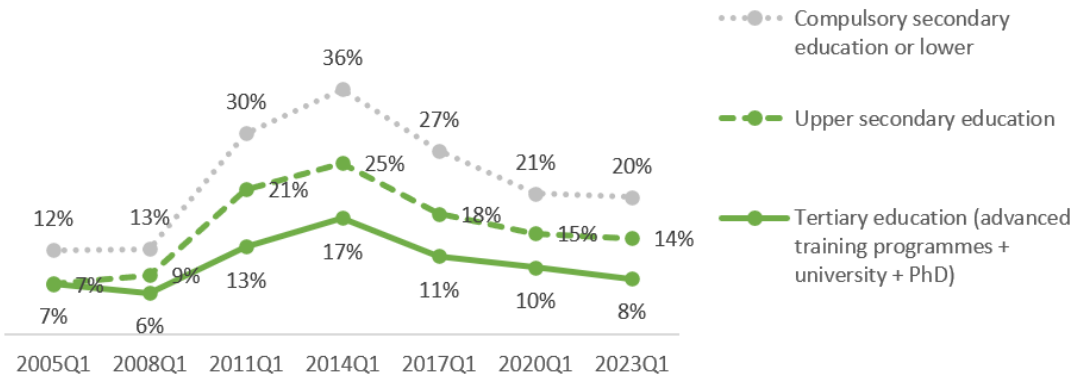
> Employment and unemployment trends

Figure 8. Employment trend by level of education (people aged 25 to 44 – EAPS, 1st quarter 2023)



Source: National Statistics Institute (INE).

Figure 9. Unemployment trend by level of education (people aged 25 to 44 – EAPS, 1st quarter 2023)



Note: the unemployment rate is the number of unemployed as a percentage of the total labour force.

Source: National Statistics Institute (INE).

Over the last three years, the employment rate of people with upper secondary and tertiary education has risen slightly and the corresponding unemployment rate has fallen

- The employment rate of tertiary educated people is 85% (three percentage points higher than in 2020), while the unemployment rate is 8% (two percentage points lower than in 2020).
- The distance between unemployment rates by level of education has remained relatively constant since 2020, and is still much wider than the minimal differences observed before the economic crisis. However, the unemployment rate for people with tertiary education has nearly returned to pre-crisis levels.

SURVEY ON EMPLOYMENT OUTCOMES OF MASTER'S DEGREE GRADUATES

Employment status

> Employment

Figure 10. Trend in the employment, unemployment and inactivity rates of master's degree graduates

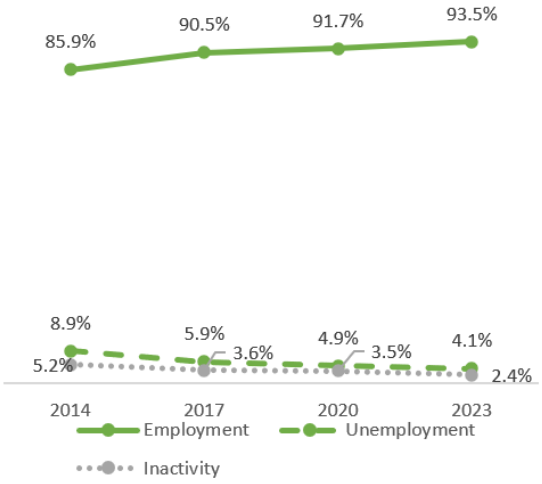


Figure 11. Overall employment rates and increase between 2020 and 2023 by disciplinary field

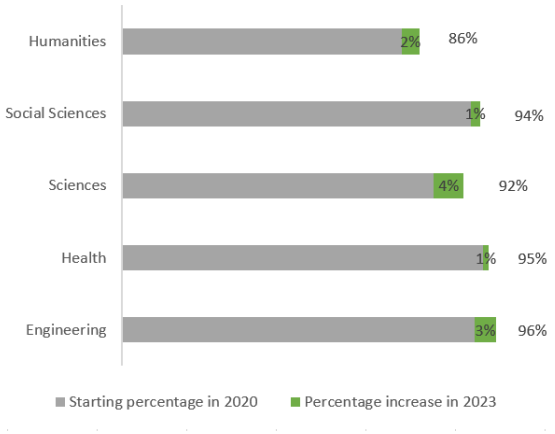
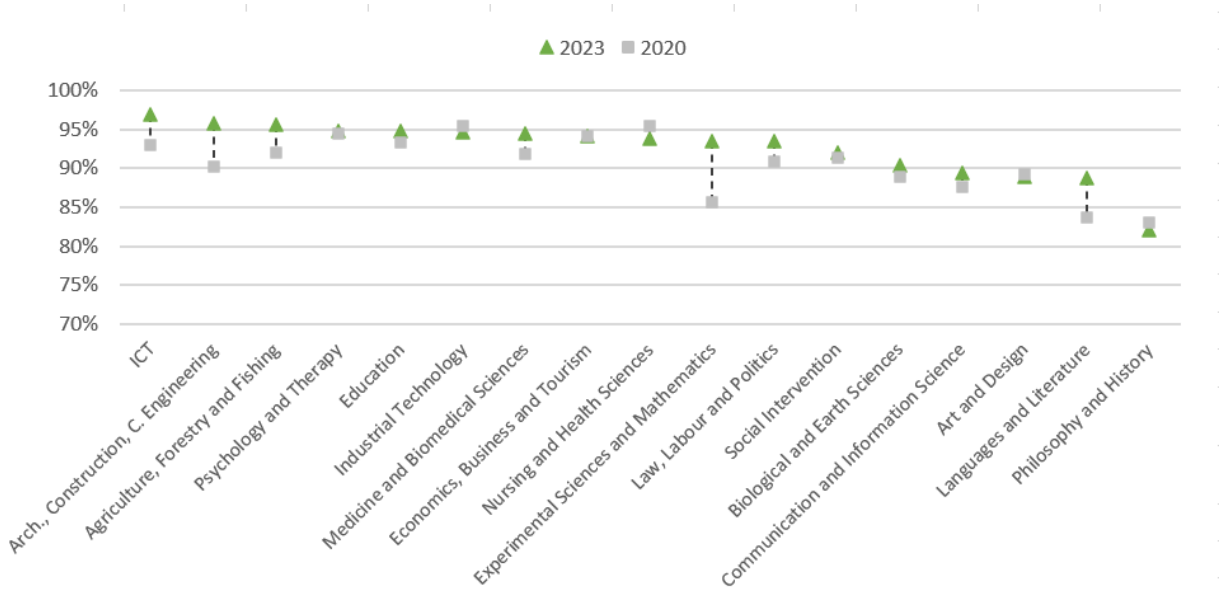


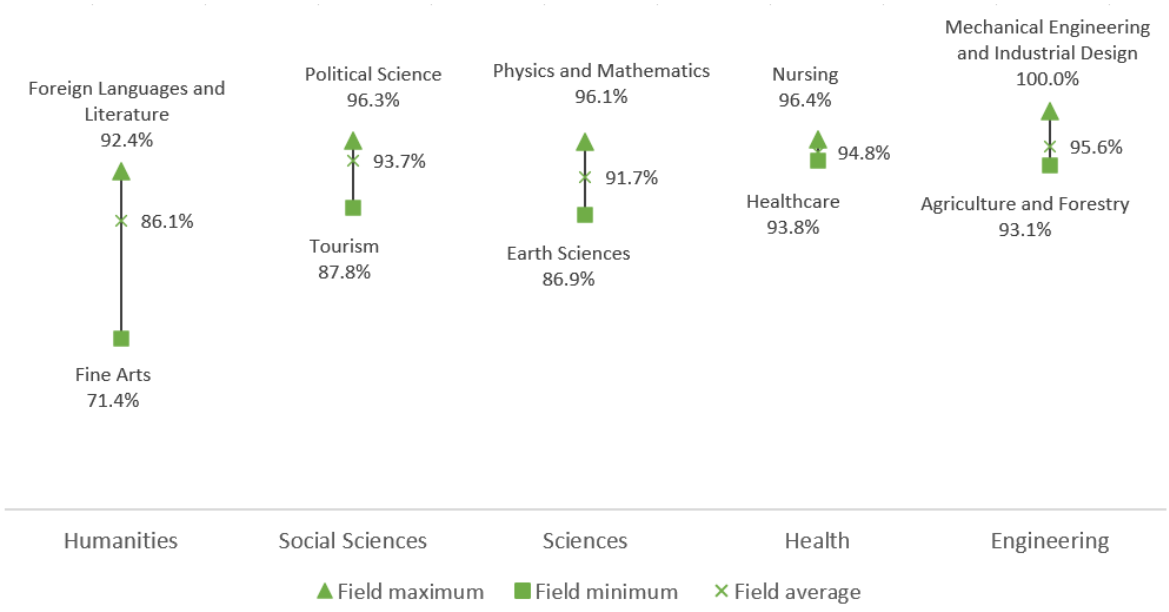
Figure 12. Employment trend by broadened subfield (2020-2023)



Ninety-three per cent of master's degree graduates were working at the time of the survey

- Employment is on an upward trend, reaching an all-time high in 2023.
- According to the data, the economic strain caused by the health crisis had no apparent impact on employment. Three years on, the figures are back to where they were before.
- Employment has increased in almost all subfields since 2020, particularly in Experimental Sciences and Mathematics and in Languages and Literature.

Figure 13. Employment rate by field of knowledge in 2023 (maximum and minimum specific subfield shown for each field)

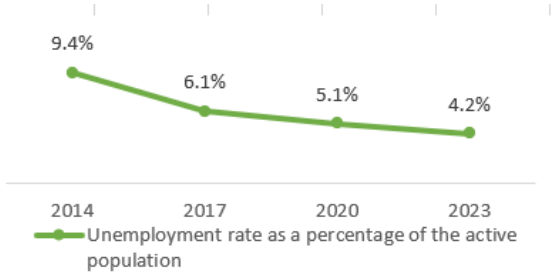


Engineering has the highest employment rate, followed by Health and Social Sciences

- Humanities differs the most from the other fields, coming in seven points under the overall average.
- Health has the smallest internal employment gap. This gap is the widest in Humanities, with employment ranging from 92% in Foreign Languages and Literature to 71% in Fine Arts.

> Unemployment characteristics

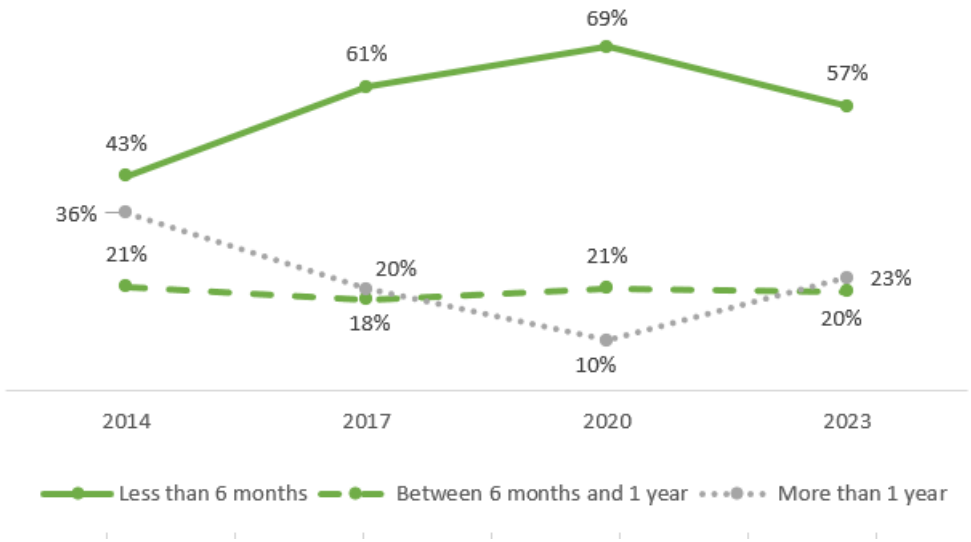
Figure 14. Unemployment trend of master's degree graduates (as a percentage of the active population)



The unemployment rate is below the full employment threshold (5%)

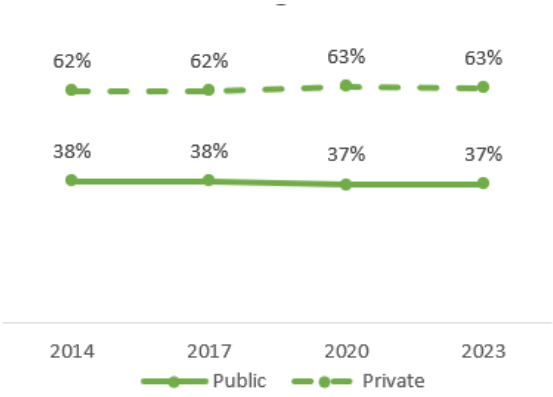
- For the first time, the unemployment rate for this group has fallen below 5%, a far cry from the 9.3% for the Catalan population aged 25 to 54 as a whole (Idescat, 1st quarter 2023).
- Of the small proportion of graduates who are looking for work (*n* = 629), most have been doing so for less than six months.

Figure 15. Trend in the amount of time spent unemployed (as percentages of the unemployed population)



> Employment sector

Figure 16. Employment trends by sector



The overall distribution of graduates employed in the public and private sectors has remained stable

> Although their distribution across economic sectors varies by disciplinary field (as expected), the sector of education, culture and research accounts for a relevant proportion of graduates in all cases.

Figure 17. Graduate distribution by economic sector and disciplinary field (2023)

	Humanities	Social S.	Sciences	Health	Engineering	Overall
Primary sector, industry and construct	5%	10%	23%	4%	43%	15%
Consumer and information services	10%	12%	4%	3%	8%	9%
Communication technologies	5%	4%	3%	0%	10%	4%
Finance and business services	10%	23%	11%	2%	16%	17%
Public administration	6%	12%	5%	6%	7%	10%
Education, culture and research	60%	32%	42%	37%	13%	32%
Health and social care	3%	7%	10%	47%	4%	12%
	100%	100%	100%	100%	100%	100%

> Job suitability

Figure 18. Trend in the suitability of functions performed at work

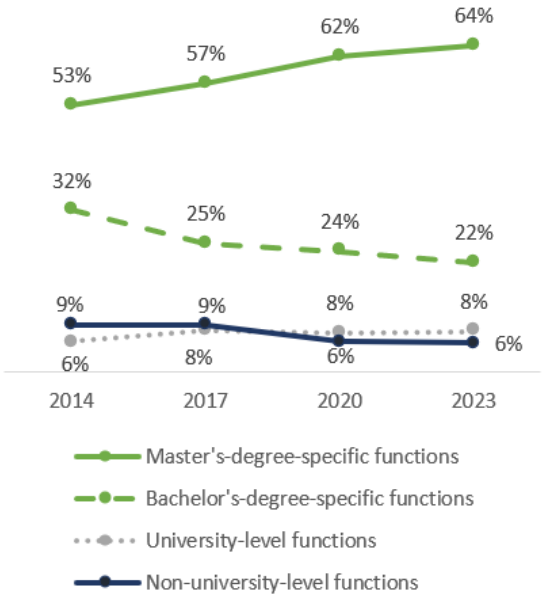
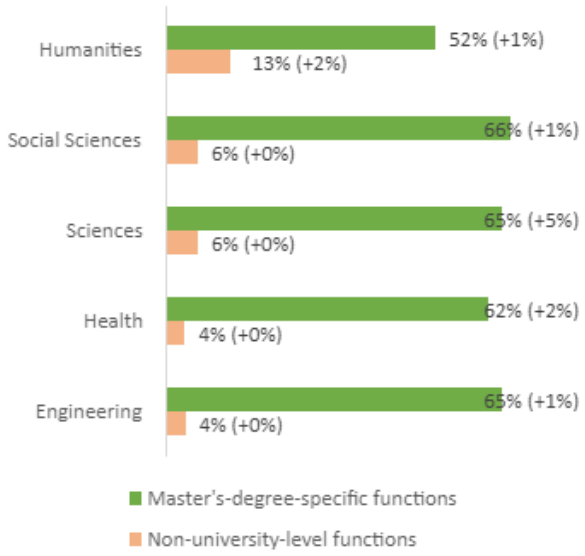


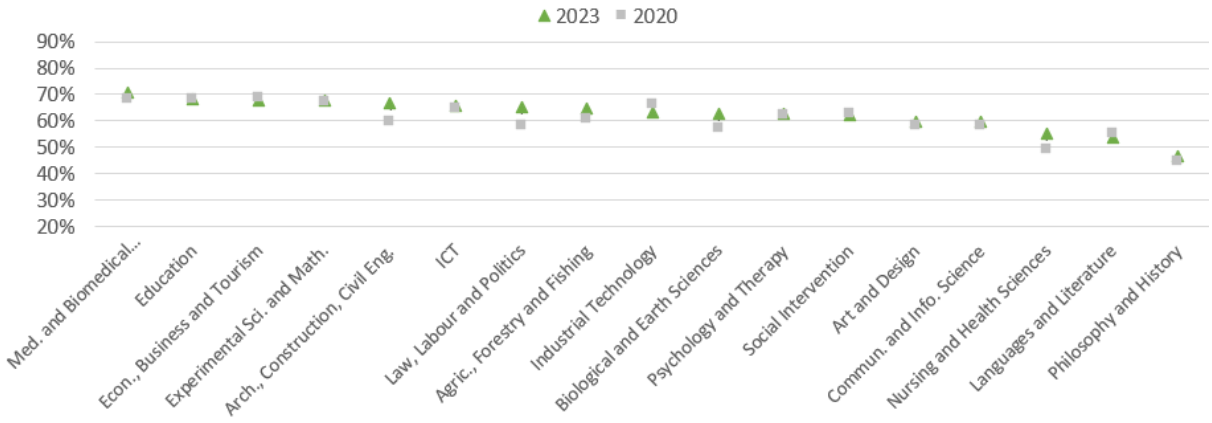
Figure 19. Functions performed at work by disciplinary field (2023 and variation since 2020)



More than 6 out of 10 graduates perform specific functions related to their master's degree

- The percentage is also on an upward trend, reaching an all-time high in 2023. Therefore, not only is employment among master's degree graduates high, but the type of work they do is also closely aligned to their education, with 86% performing specific functions related to their master's or bachelor's degree.
- Only 6% of graduates have jobs that do not involve university-level functions.
- Job suitability is increasing in all fields, but overqualification is also on the rise in Humanities.

Figure 20. Trend in the percentage of graduates performing master's-degree-specific functions by broadened subfield (2020-2023)



- In most subfields, the proportion of graduates in suitable jobs has remained similar from 2020 to 2023, with only a few subfields showing slight improvements.
- Humanities pales in comparison with the other knowledge areas (10-14 percentage points less on average and more overqualification).

Figure 21. Performance of master's-degree-specific functions by knowledge area in 2023 (maximum and minimum specific subfield shown for each field)

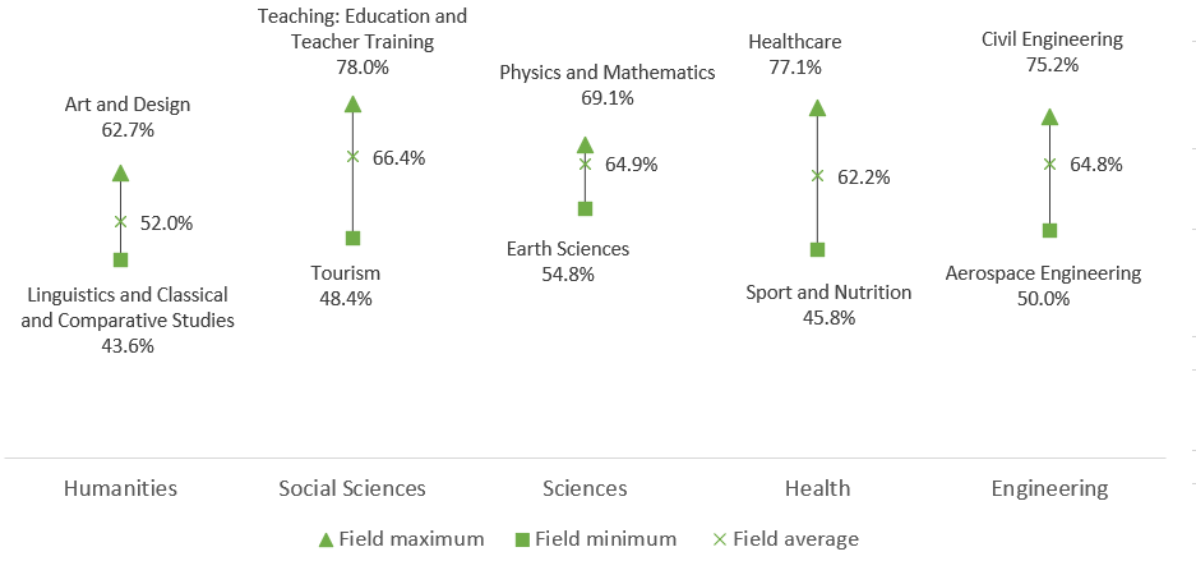
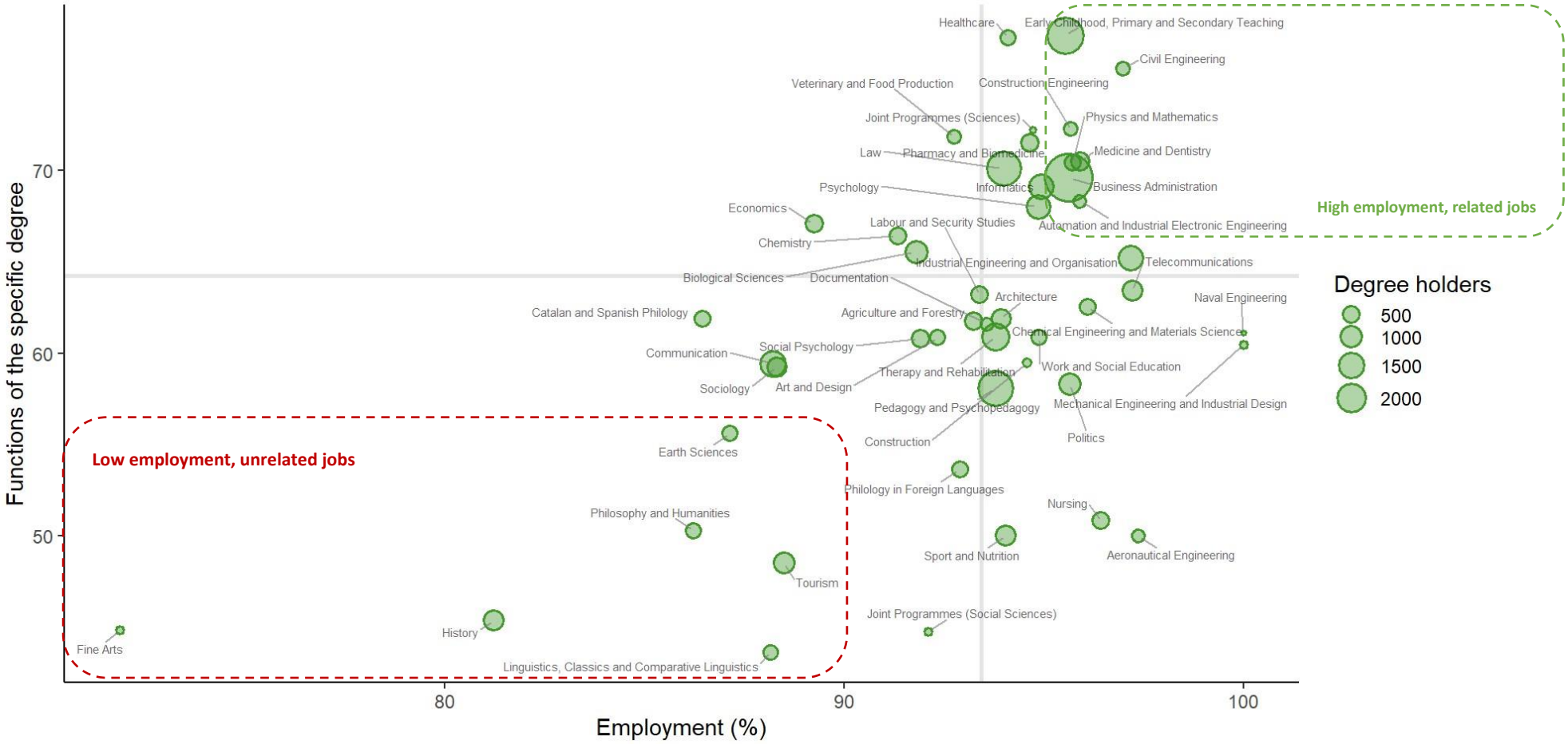


Figure 22. Relationship between employment and the performance of master's-degree-specific functions by specific subfield in 2023 (system average shown as an axis)



The main subfields in terms of number of graduates show above-average employment results

- These include Business Administration and Teaching, which account for a large number of master's degree graduates (around 25% between the two) and show above-average employment results.
- In contrast, master's degree graduates in subfields such as History, Tourism, and Philosophy and Humanities have a harder time finding a job related to their master's degree.

Working conditions

> Contract type

Figure 23. Trend in contract type

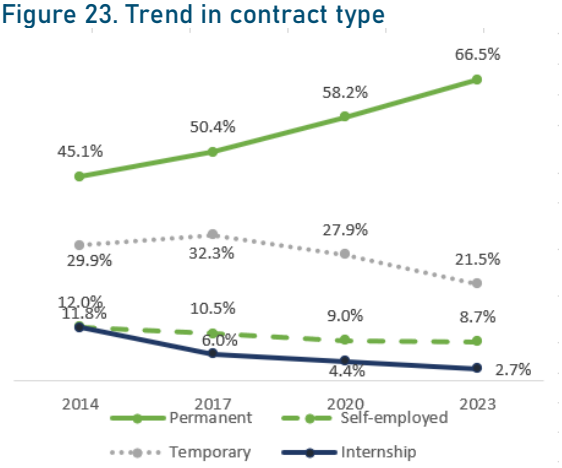


Figure 24. Contract type by sector (2023)

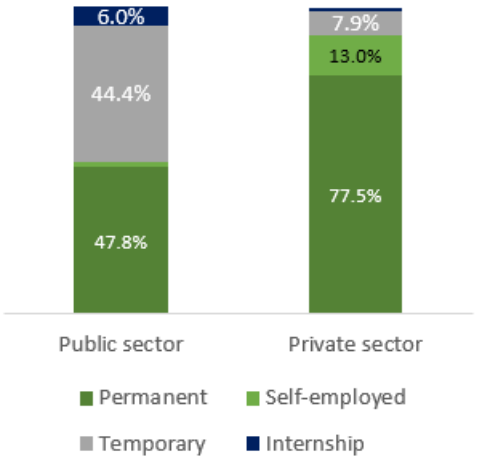
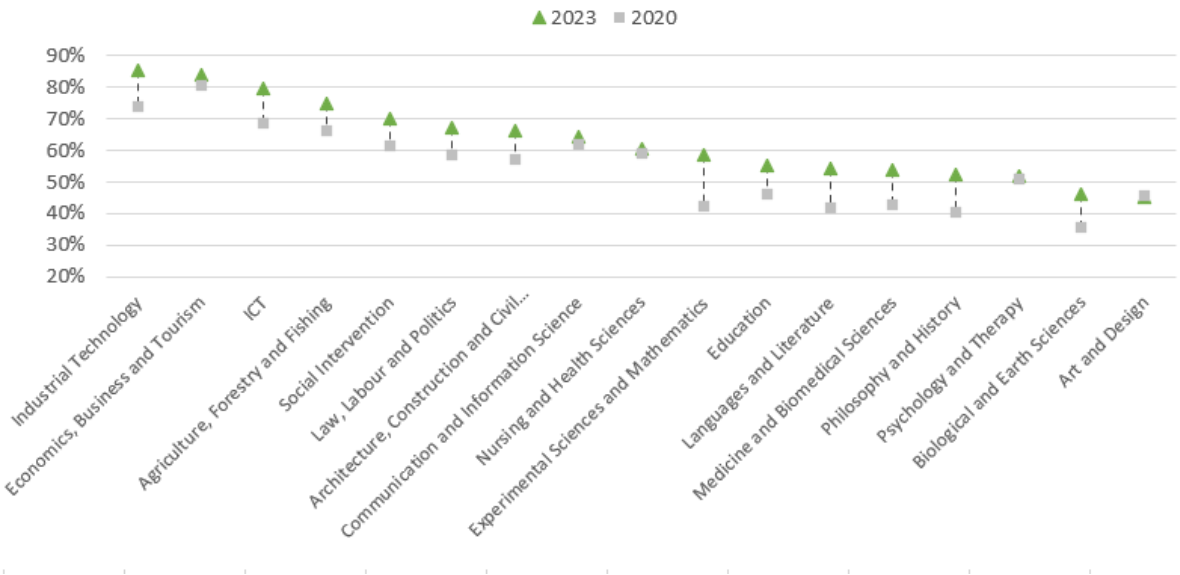


Figure 25. Trend in the percentage of master's degree graduates on permanent contracts by broadened subfield (2020-2023)



Job stability has increased thanks to the 2022 labour reform,[1] with nearly 7 out of 10 master's degree graduates on permanent contracts

- This growth in stability has occurred across almost all educational subfields.
- The public sector has a higher rate of temporary employment (76% of overall temporary employment).

Figure 26. Contract type by area knowledge (2023)

	Humanities	Social Sciences	Sciences	Health	Engineering
Permanent	52.1%	69.4%	50.6%	54.8%	78.5%
Self-employed	13.3%	8.2%	3.1%	12.7%	7.1%
Temporary	28.1%	20.6%	32.2%	28.6%	11.6%
Internship	4.6%	1.2%	13.7%	3.5%	2.5%
No contract	1.9%	0.6%	0.4%	0.4%	0.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

For each contract type, higher relative proportions compared to the other fields are shown against a shaded background.

There are some differences in contract type by disciplinary field

- In Humanities and Health, self-employment and temporary contracts are relatively prominent.
- In Sciences, there are more temporary and internship contracts, as these are common in innovation and research.
- While job stability has increased overall, the proportion of graduates on permanent contracts in 2023 varies significantly between fields, ranging from 50% in Sciences to 78% in Engineering.

[1] The labour reform enacted by Royal Decree-Law 32/2021 has helped to reduce the proportion of temporary contracts (85% of contracts signed in Catalonia in 2019 were temporary, compared to 50% in 2023). Although part of the increase in permanent contracts is due to the proliferation of permanent seasonal contracts (and it remains to be seen how this issue will develop in the future), current data are being analysed by the Labour and Production Model Observatory (2022 and 2023), among others, to determine the real impact of the reform.

> Full-time employment

Figure 27. Trend in the percentage of master's degree graduates in full-time employment

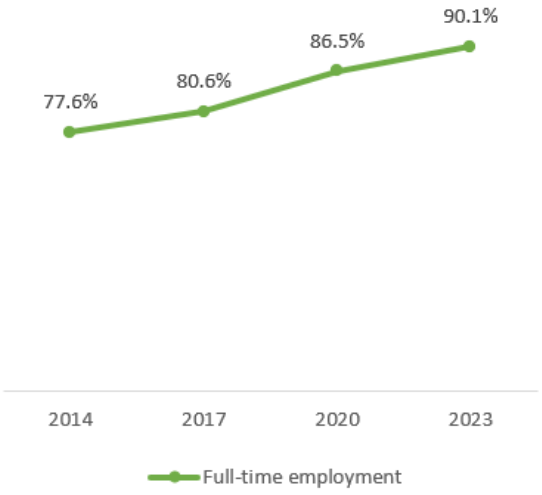
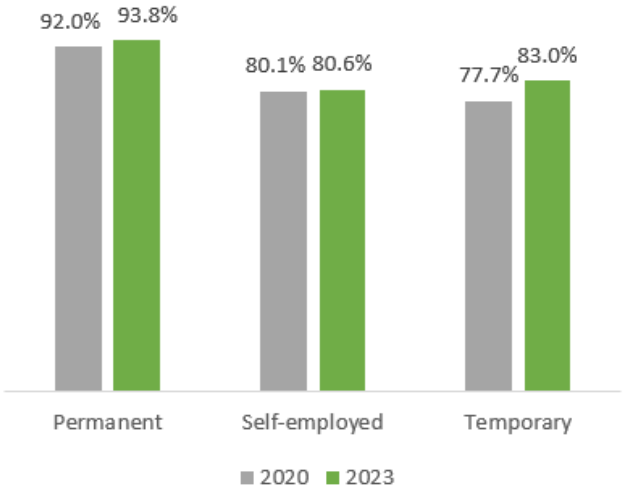


Figure 28. Full-time employment comparison by contract type (2020-2023)



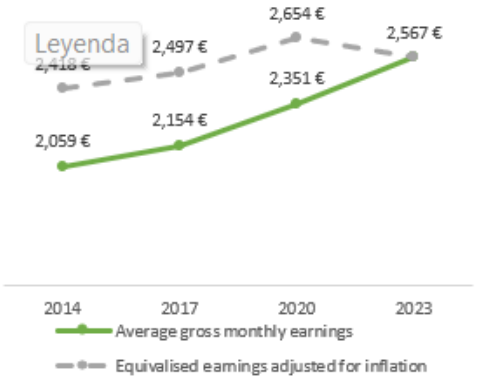
Full-time employment is on an upward trend

> Ninety per cent of working master's degree graduates are in full-time employment.

> Full-time employment has increased across all contract types.

> Income

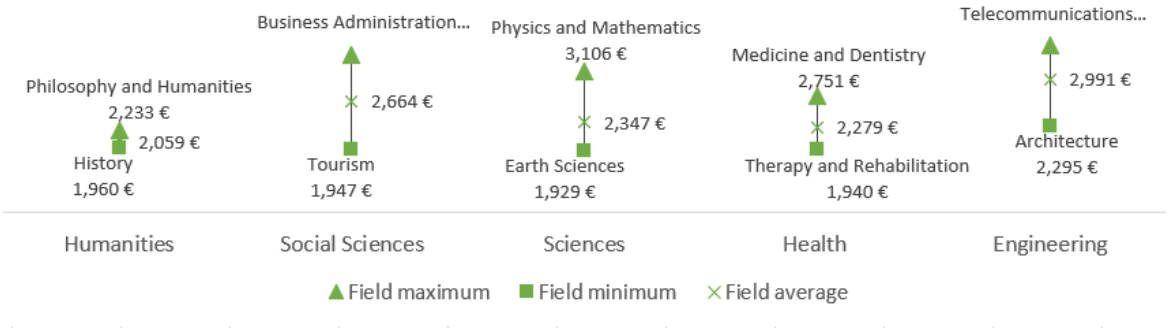
Figure 29. Trend in average gross monthly earnings and equivalised earnings adjusted for inflation[2] (only master's degree graduates working full-time in Spain)



The purchasing power of master's degree graduates is in decline

- The average gross earnings of master's degree graduates working in Spain have increased over the last nine years, even taking into account the effect of inflation.
- However, their purchasing power has declined slightly over the past three years due to recent high inflation rates.

Figure 30. Average gross monthly earnings by field of knowledge in 2023 (maximum and minimum specific subfield shown for each field)



Average gross earnings are highest in Engineering and Social Sciences

- However, these two fields also have the widest internal ranges between subfields, with differences of up to €1,300 gross per month.
- Humanities has the lowest salaries and the smallest internal range.

[2] Inflation-adjusted earnings make it possible to compare purchasing power over time by taking account of changes in the average cost of living. Specifically, this report shows equivalised average earnings assuming the cost of living in 2023. To calculate these numbers, we use the Consumer Price Index (CPI) published by the Spanish National Statistics Institute in January of each year analysed (base 2021, consulted in May 2023). For each year *x*, the following formula is applied: inflation-adjusted earnings = observed earnings / index year *x* * index year 2023.

> Level of responsibility

Figure 31. Level of responsibility over others at work (2023)

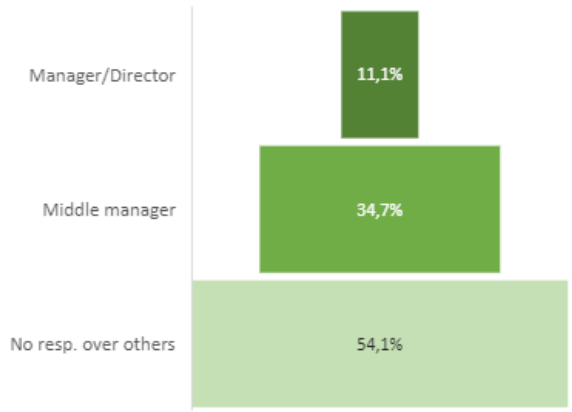


Figure 32. Percentage of master's degree graduates with responsibility over others at work (director/manager or middle manager) by economic sector (2023)

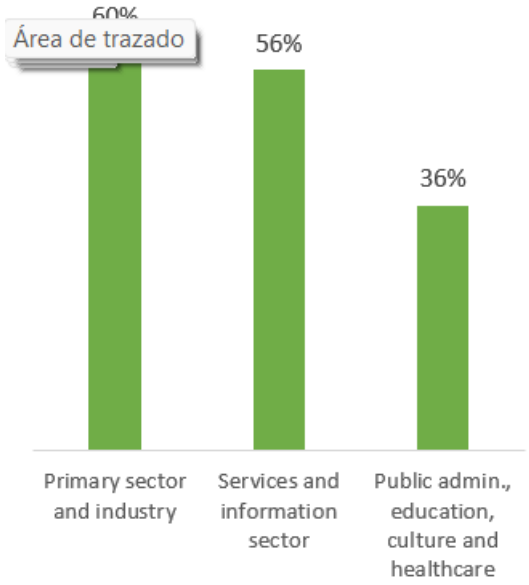
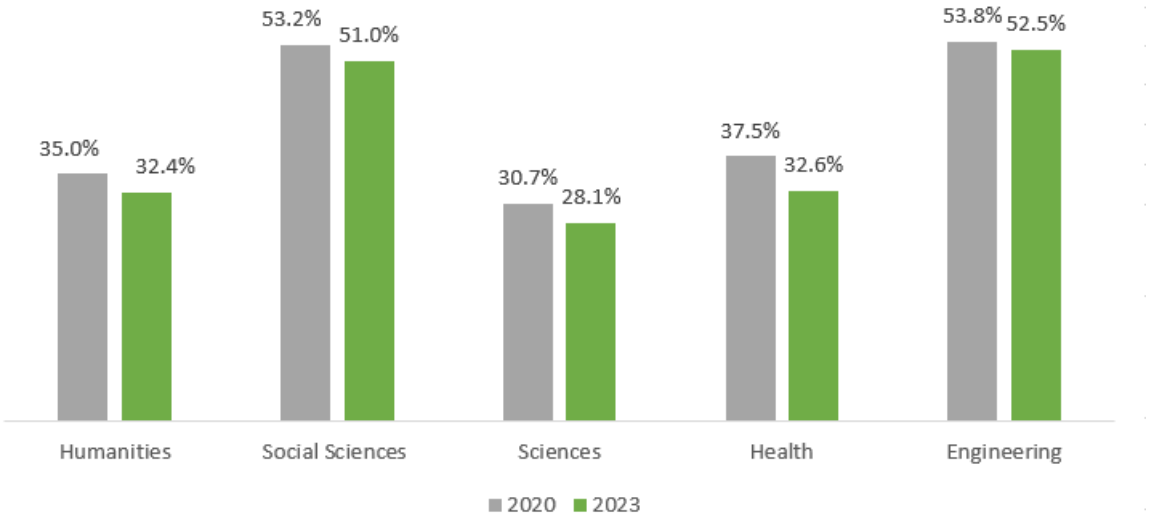


Figure 33. Comparison of the percentage of employed master's degree graduates with responsibility over others at work (director/manager or middle manager) by field of knowledge (2020-2023)



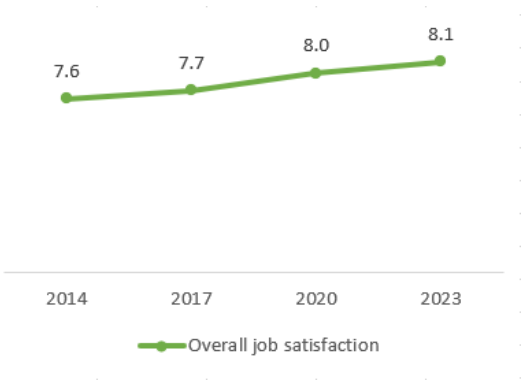
About half of all graduates have responsibility over others at work

> However, this is only the case in Social Sciences and Engineering, while in the other fields the proportion is less than 1 in 3. This is because there are comparatively fewer jobs involving responsibility over others in sectors where, as shown above, there is a higher proportion of Humanities, Sciences and Health graduates.

> The percentage of master's degree graduates with responsibility over others at work has decreased slightly since 2020.

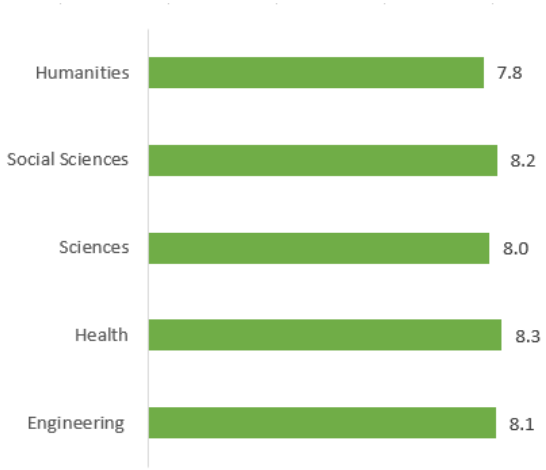
> Job satisfaction

Figure 34. Trend in overall job satisfaction (scale of 0 to 10)



Note: responses collected before 2023 were on a scale of 1 to 7 and have been converted to a scale of 0 to 10 for comparison.

Figure 35. Overall job satisfaction by field of knowledge in 2023 (scale of 0 to 10)



Job satisfaction is considerably high

> Humanities graduates are the least satisfied with their jobs (7.8), although differences with the other fields are small.

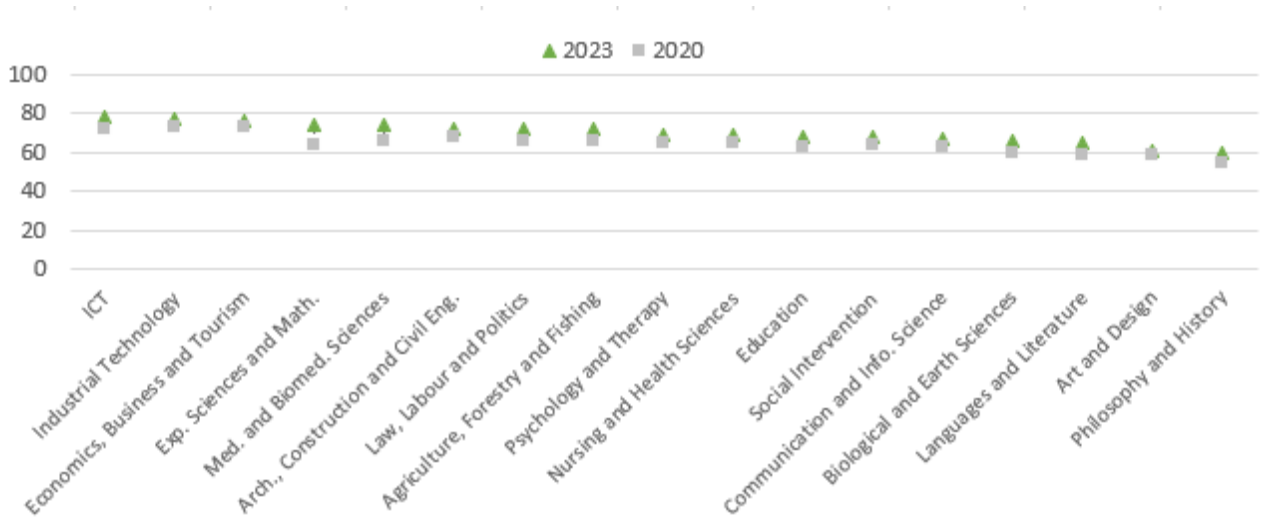
> Occupational quality index3

Figure 36. Trend in the occupational quality index

The occupational quality index has reached a record high in 2023

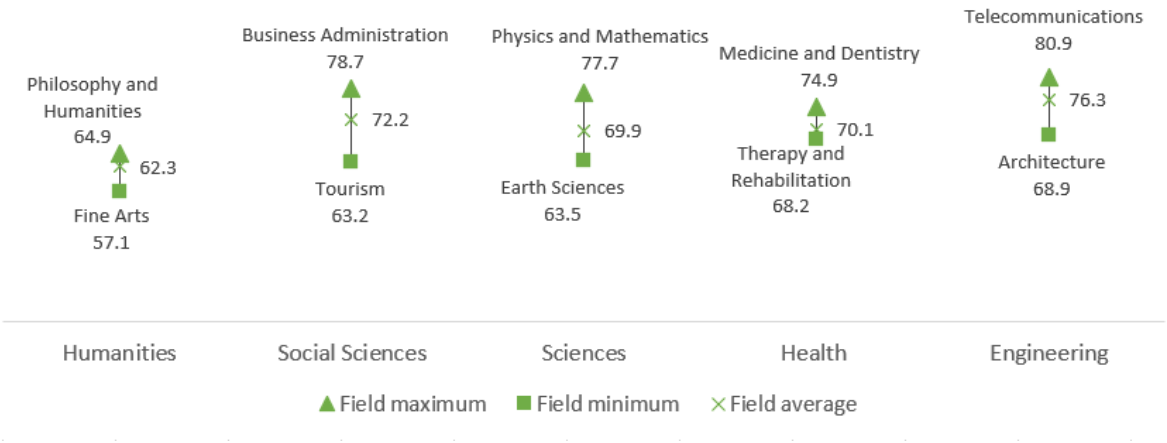
- The occupational quality index (OQI) allows us to synthesise various employment indicators such as contract type, pay, job suitability and job satisfaction.
- As seen above, all these indicators have reached record highs in 2023.

Figure 37. Trend in the occupational quality index by broadened subfield (2020-2023)



[3] The occupational quality index (OQI) is based on various indicators: contract type, job satisfaction, pay and job suitability. The values range from 0 to 100: the higher the rating, the better the occupational quality experienced. For further details, refer to Corominas et al. (2012).

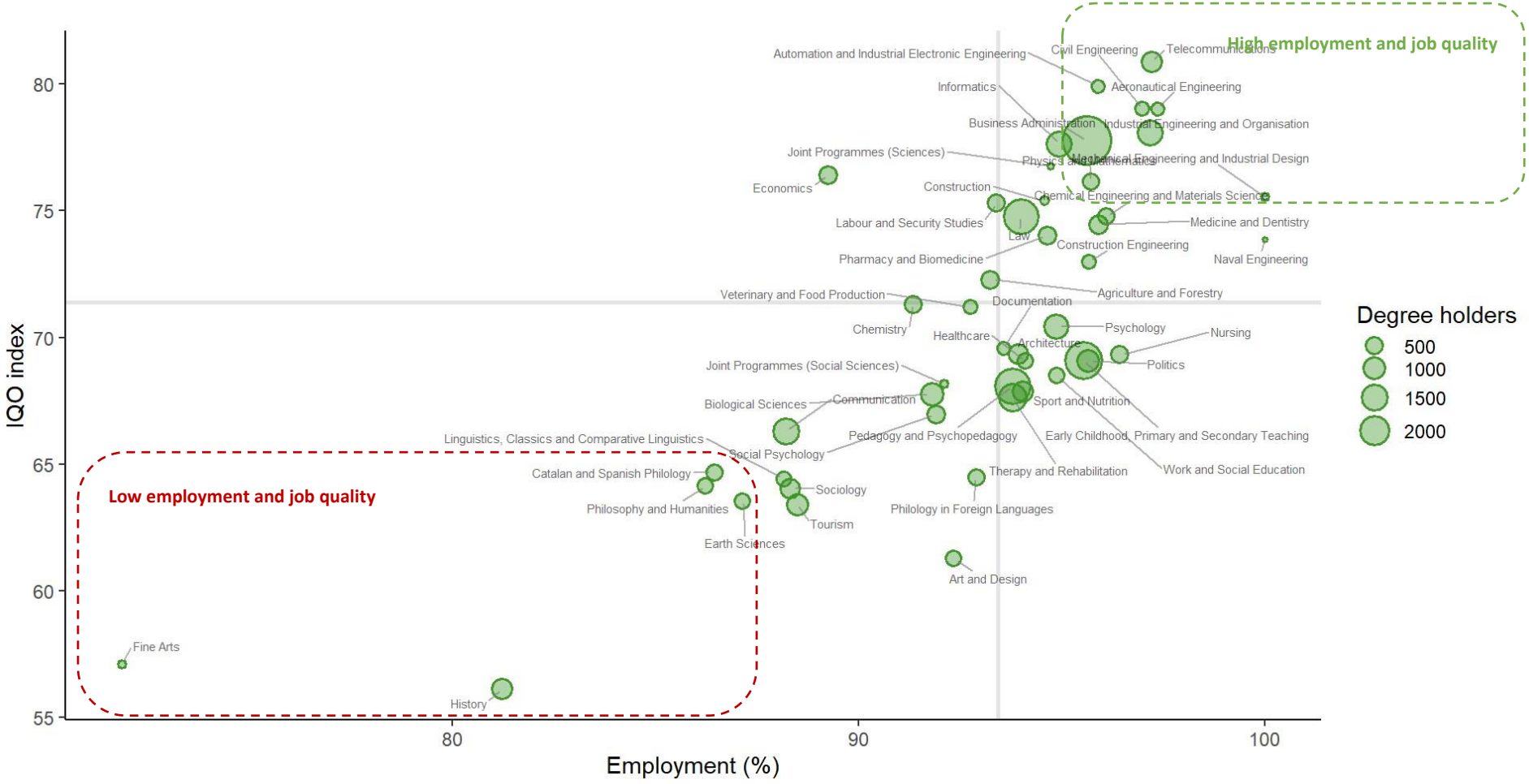
Figure 38. Occupational quality index by field of knowledge in 2023 (maximum and minimum specific subfield shown for each field)



Occupational quality has increased across all educational subfields

- This is a crucial finding. Earlier, the data pointed to a fairly general increase in employment. Here, they also show improved working conditions for graduates across the board, in subfields with already high scores and those without. The general increase in job stability is one of the reasons for this.
- However, it is worth noting that Humanities graduates report lower occupational quality than their counterparts in other fields. In fact, the maximum subfield (Philosophy and Humanities) is not so far from the minimums in the other fields. The significantly lower figures for job suitability and pay are the main reasons for this.

Figure 39. Relationship between employment and the occupational quality index by specific subfield in 2023 (system average shown as an axis)



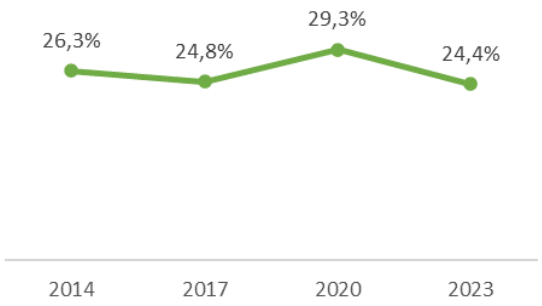
Graduates in Business Administration and certain Engineering subfields enjoy well-above-average working conditions

- These include graduates in Telecommunications, Aerospace Engineering, Industrial Engineering and Organisation, and Civil Engineering.
- In the opposite quadrant are subfields such as History, Earth Sciences, and Philosophy and Humanities, which show lower employment rates and poorer working conditions.

Career paths

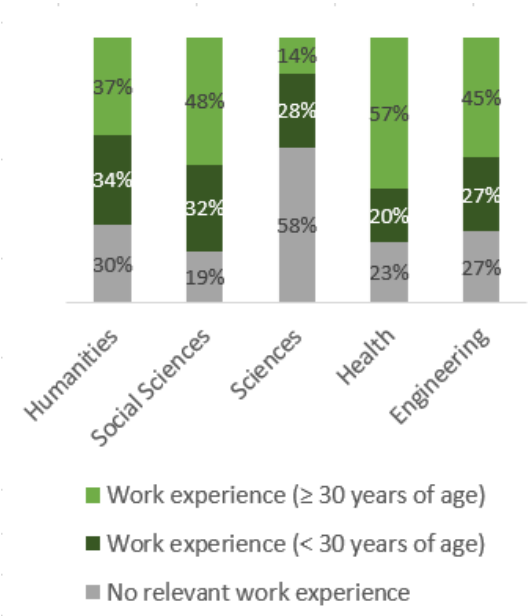
> Combining study and work

Figure 40. Trend in the percentage of graduates who did not hold a stable job from the start of their bachelor's degree to the end of their master's degree



Note: this includes graduates who did not work at all or only worked intermittently between the start of their bachelor's degree and the end of their master's degree.

Figure 41. Prior employment history by field of knowledge (2023)



Around 25% of graduates had no relevant work experience before earning their master's degree

- These are mainly career students who move directly from one degree to the next. They make up the majority of graduates in Sciences.
- In Social Sciences and Health, around 50% of graduates had previous work experience and were over the age of 30. For these individuals, the master's degree is a means of continuous professional development aimed at gaining specialised knowledge and skills or broadening their career opportunities.
- Post-master's degree employment outcomes are slightly better for graduates who had previous work experience, even for those under 30.

Figure 42. Average age and employment indicators according to prior employment history (2023)

	No relevant work experience	Work experience (< 30 years old)	Work experience (≥ 30 years of age)
Average age at the time of the survey	28.7	27.9	37.5
Working after the master's degree in less than three months	66.3%	80.6%	84.3%
People employed	90.2%	94.1%	94.8%
Occupational quality index average	71.3	71.7	72.2

> Impact of the master's degree on graduates' employment outcomes

Figure 43. Impact of the master's degree on graduates' employment outcomes in relation to the job they held before graduating, according to their employment history (2023)

	Work experience (< 30 years old)	Work experience (≥ 30 years of age)	Overall
Better contract type	62.0 %	45.8%	**52.1%**
Better pay	74.5%	58.3%	**64.6%**
Better working hours	55.1%	38.8%	**45.2%**
Better professional category	75.0%	59.7%	**65.6%**

Figure 44. Objective impact of the master's degree on graduates' employment outcomes in relation to the job they held before graduating, by field of knowledge (2023)

Figure 45. Subjective impact of the master's degree on graduates' employability in relation to their employment status before graduating, by field of knowledge in 2023 (scale of 0 to 10)

	Humanities	Social Sciences	Sciences	Health	Engineering
More job opportunities	5.8	6.9	6.9	6.3	6.9
New responsibilities	5.3	6.6	6.3	5.5	6.5
New products or lines	5.8	6.7	6.6	6.1	6.7
Enriched training	7.8	7.7	7.7	7.8	7.7
More contacts	5.9	6.3	6.6	5.8	6.2

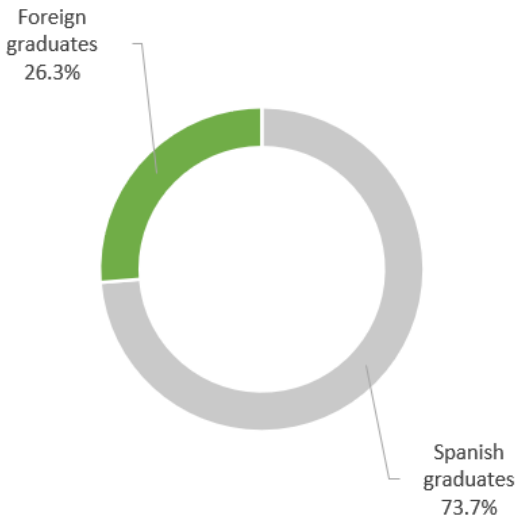
For more than half of graduates, the master's degree led to an improvement in employment compared to their previous job

- This improvement is particularly evident in terms of pay and professional category.
- While the impact is greatest for people under 30, there is also an improvement in employment for older people.
- The impact is comparatively weaker in Health, despite being around 40-50%.

Internationalisation

> Talent drain and retention[4]

Figure 46. Graduates' place of origin (2023)



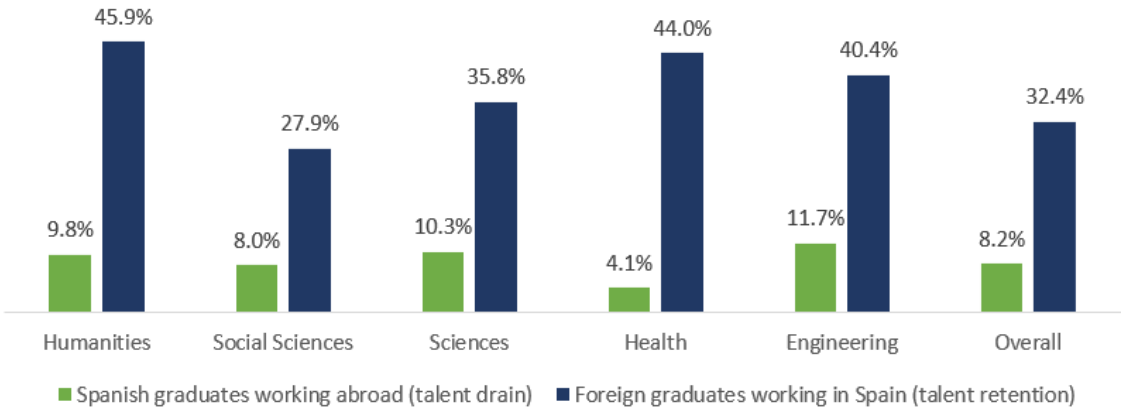
Note: foreign graduates are those who, regardless of their nationality, came from outside Spain to complete their master's degree (or completed it from abroad in the case of online master's degrees).

About 1 in 4 survey respondents came from abroad to complete their master's degree

> Of these, 32.4% were working in Spain at the time of the survey. Talent retention is highest in Humanities and Health.

> Meanwhile, 8.2% of Spanish students were working abroad at the time of the survey. The talent drain is greatest in Engineering.

Figure 47. Talent drain and retention by disciplinary field (2023)



Note: foreign graduates are those who, regardless of their nationality, came from outside Spain to complete their master's degree (or completed it from abroad in the case of online master's degrees).

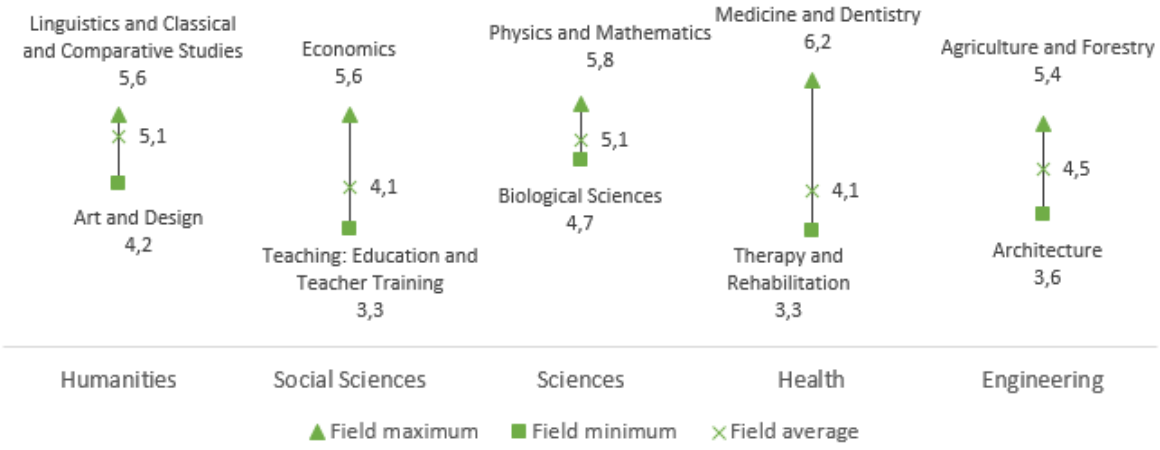
[4] The data refer to the graduates who responded to the survey and therefore overestimate the number of people living in Spain. Although 33% of the master's degree graduates in the target population were foreign nationals, the proportion among the survey respondents is 20% (26% if we include respondents whose nationality is unknown).

> Level of internationalisation of the master's degree

Figure 48. Graduates' rating (scale of 0 to 10) of the internationalising nature of the master's degree according to their place of origin (2023)

	Spanish graduates	Foreign graduates
Making contacts with international teaching staff	3.6	5.2
International networking	3.3	5.6
Gaining an international perspective in the master's degree subject area	4.3	7.1

Figure 49. Graduates' rating (scale of 0 to 10) of the international perspective they gained in the master's degree subject area by field of knowledge in 2023 (maximum and minimum specific subfield shown for each field)



Note: Spanish graduates only.

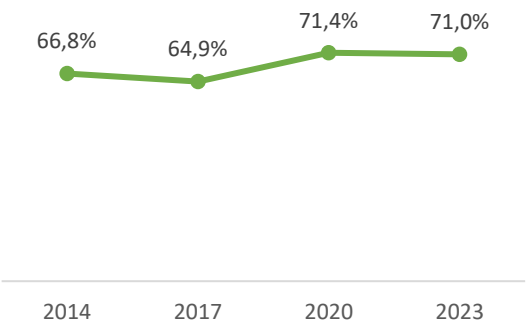
Spanish master's degree graduates do not perceive a high level of internationalisation with respect to any of the items in the survey

- While foreign master's degree graduates rated each item above a 5 out of 10, Spanish graduates gave a much lower score.
- Only the average for Spanish graduates in Humanities and Sciences is above the 5 out of 10 threshold.
- Medicine and Dentistry is the highest rated subfield in this respect.

Satisfaction with the master's degree

> Would graduates choose the same master's degree again

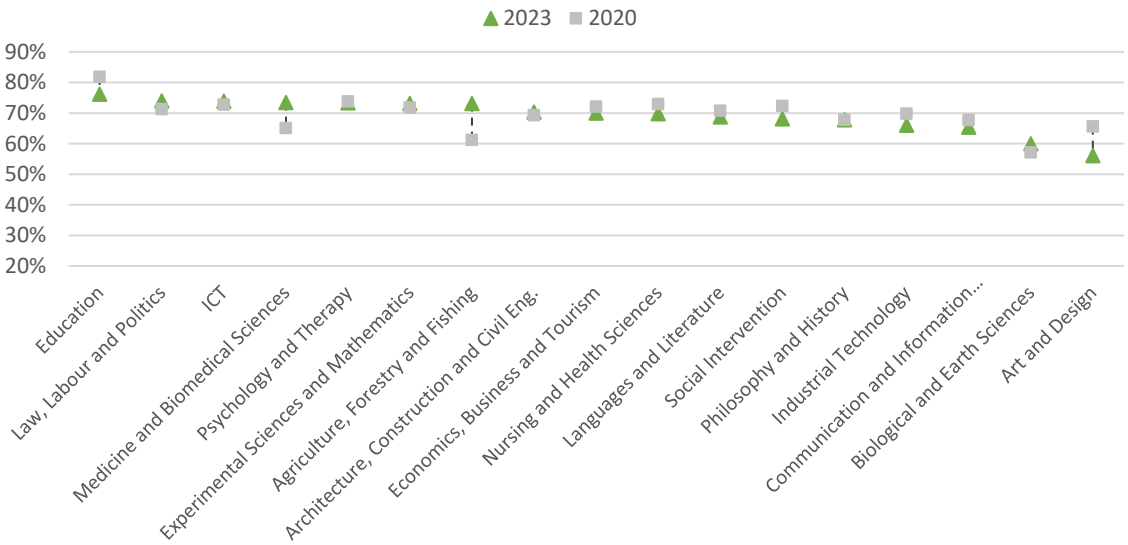
Figure 50. Trend in the percentage of graduates who would choose the same master's degree again



Satisfaction with the master's degree has plateaued

> However, satisfaction remains considerably high, with 7 out of 10 graduates saying they would choose the same master's degree again.

Figure 51. Trend in the percentage of graduates who would choose the same master's degree again by broadened subfield (2020-2023)

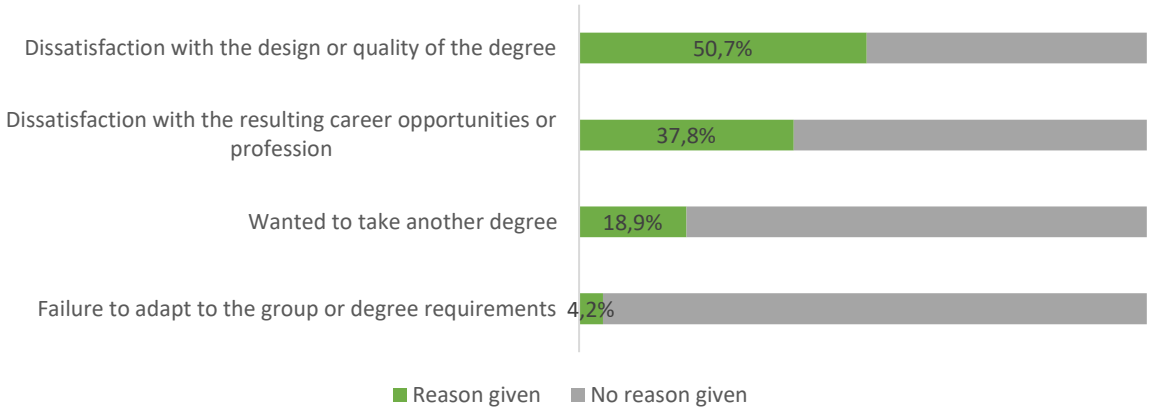


Eight of the 17 subfields show a drop in satisfaction of more than two percentage points

> The drop in Art and Design (10 percentage points) and Education (6 points) is particularly noteworthy. It should be noted that the Education subfield accounts for a significant proportion of the graduates surveyed (16%) and that, although it still has the best score for this indicator in 2023, this drop represents a major challenge for the university system.

> At the other end of the scale, satisfaction has risen in Agriculture, Forestry and Fishing (12 percentage points) and in Medicine and Biomedical Sciences (8 points).

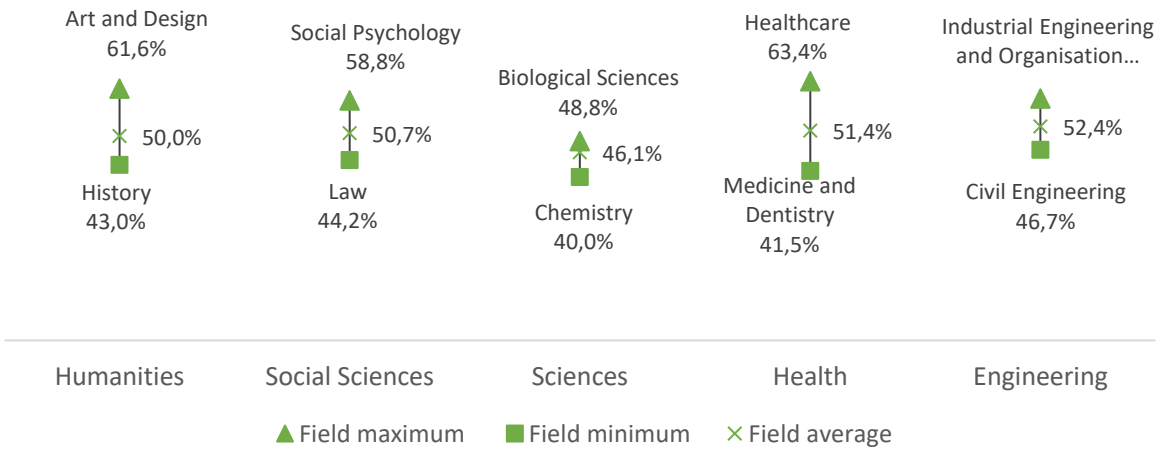
Figure 52. Main reasons why graduates would not choose the same master's degree again (respondents could check more than one response) in 2023



The main reason given by those who would not choose the same master's degree again is the degree's design and quality, aspects that can be improved

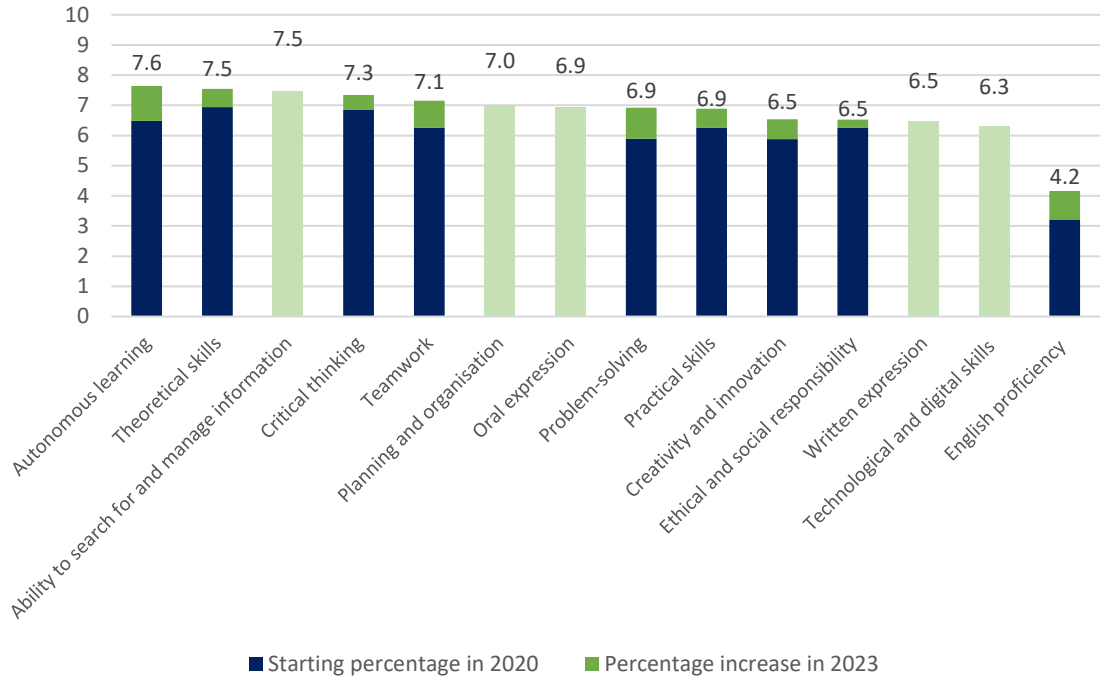
- The proportion of graduates citing dissatisfaction with the design or quality of the master's degree is similar across the disciplinary fields.
- There are some subfields where this reason is given by a high percentage of graduates (6 out of 10): Art and Design, Social Psychology, Healthcare, and Industrial Engineering and Organisation.
- The minimum percentage of dissatisfied graduates is at least 40% in every field, which means that despite the employment results presented here, the university system still has room to improve all of its master's degrees in order to increase graduate satisfaction.

Figure 53. Percentage of people who would not choose the same master's degree again due to dissatisfaction with the design or quality of the degree, by field of knowledge in 2023 (maximum and minimum specific subfield shown for each field)



> Education provided by the master's degree

Figure 54. Graduates' rating of the education they received (2023) and the increase compared to 2020 (scale of 0 to 10)



Note: some skills were included in the survey for the first time in 2023, so no comparison is available. Responses collected before 2023 were on a scale of 1 to 7 and have been converted to a scale of 0 to 10 for comparison.

Master's degree graduates rate their education positively

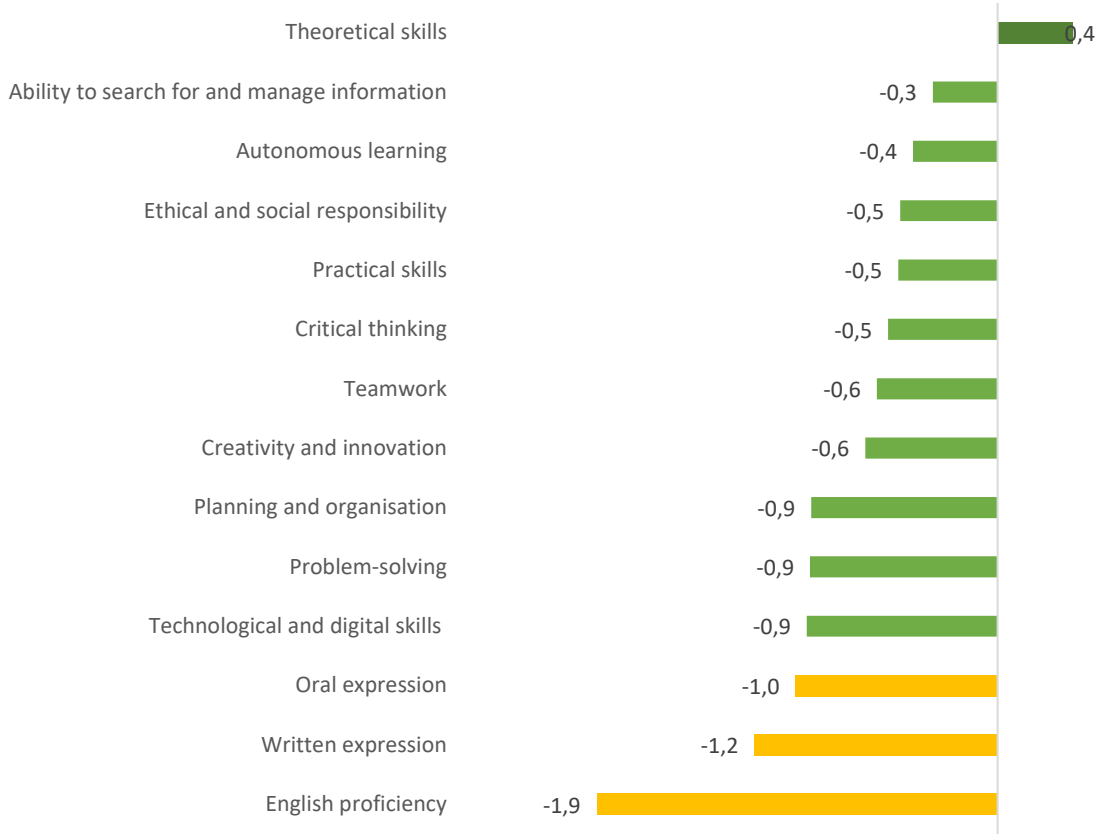
- All comparable skills were rated higher than in 2020, particularly autonomous learning, problem solving and English proficiency.
- The most highly rated skills are autonomous learning, theoretical skills, and the ability to search for and manage information.
- Graduates rate English proficiency lowest in terms of the education they received on their master's degree course.
- The figure below shows rating increases across all disciplinary fields.

Figure 55. Graduates' rating of the education they received (2023) and the difference compared to 2020, by field of knowledge (scale of 0 to 10)

	Humanities		Social Sciences		Sciences		Health		Engineering	
	2023	Diff.	2023	Diff.	2023	Diff.	2023	Diff.	2023	Diff.
Theoretical skills	7.8	+0.7	7.4	+0.5	7.7	+1.0	7.7	+0.6	7.6	+0.6
Practical skills	6.9	+1.2	6.9	+0.6	7.0	+0.5	7.0	+0.5	6.7	+0.8
Teamwork	6.5	+1.2	7.3	+0.9	7.2	+1.3	6.9	+0.8	7.0	+0.6
Problem-solving	6.5	+1.3	6.9	+0.9	7.1	+1.2	6.7	+0.9	7.4	+1.1
Critical thinking	7.8	+0.2	7.4	+0.6	7.2	+0.5	7.2	+0.3	7.2	+0.4
Creativity and innovation	6.8	+0.4	6.6	+0.8	6.2	+0.7	6.2	+0.5	6.5	+0.5
English proficiency	4.2	+1.0	4.0	+1.1	5.5	+1.0	3.7	+0.8	4.4	+0.7
Autonomous learning	7.8	+1.3	7.5	+1.1	7.6	+1.4	7.6	+1.0	7.9	+1.4
Ethical and social responsibility	6.3	+0.3	6.7	0.2	6.2	+0.8	6.6	0.0	6.2	+0.6
Oral expression	7.2	__	7.0	__	7.0	__	6.7	__	6.6	__
Written expression	7.0	__	6.6	__	6.2	__	6.5	__	5.9	__
Planning and organisation	6.9	__	7.1	__	6.4	__	6.9	__	7.0	__
Technological and digital skills	5.6	__	6.2	__	6.6	__	6.3	__	6.9	__
Ability to search for and manage information	7.7	__	7.4	__	7.5	__	7.6	__	7.4	__

> Education shortfall = room for improvement

Figure 56. Education surplus or shortfall in 2023: difference between graduates' average rating of the education they received on a specific skill and the usefulness of this skill in the workplace (only master's degree graduates performing university-level functions at work; scale of 0 to 10)



English proficiency suffers the greatest shortfall between the education provided and the usefulness of this skill in the workplace

- This is closely followed by oral and written expression, both of which show substantial room for improvement.
- The remaining skills have shortfalls of less than one point out of 10.
- There is even an education surplus with respect to theoretical skills, meaning that they are worked on more during the master's degree than is useful in the workplace.

Figure 57. Education surplus or shortfall in 2023: difference between graduates' average rating of the education they received on a specific skill and the usefulness of this skill in the workplace, by field of knowledge (only master's degree graduates performing university-level functions at work; scale of 0 to 10)

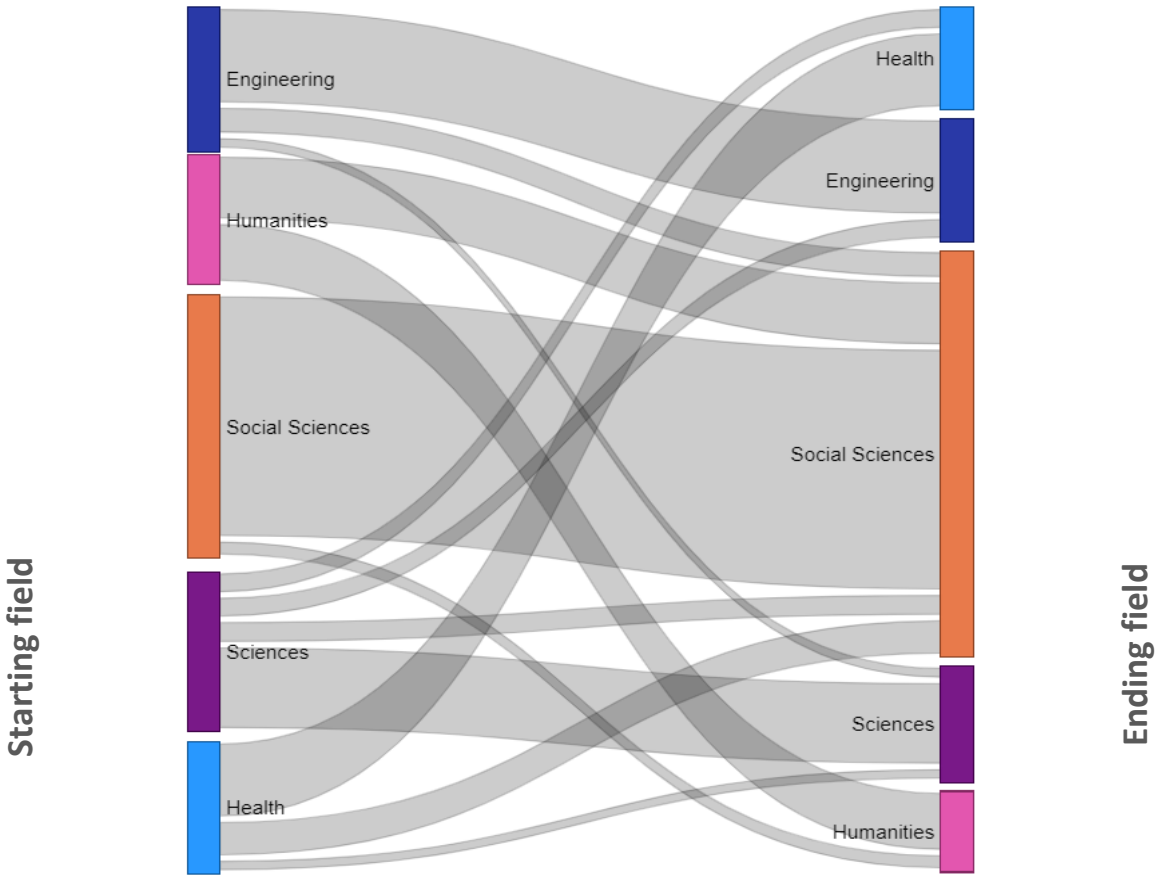
	Humanities	Social Sciences	Sciences	Health	Engineering
Theoretical skills	0.9	0.3	0.5	0.2	0.5
Practical skills	-0.2	-0.5	-0.5	-0.4	-0.6
Teamwork	-0.5	-0.5	-0.7	-0.6	-0.8
Problem-solving	-0.9	-0.9	-1.1	-0.8	-0.8
Critical thinking	0.2	-0.5	-0.9	-0.5	-0.8
Creativity and innovation	-0.4	-0.6	-1.0	-0.7	-0.7
English proficiency	-1.9	-1.8	-2.2	-1.2	-2.7
Autonomous learning	-0.1	-0.4	-0.7	-0.3	-0.4
Ethical and social responsibility	-0.4	-0.4	-0.6	-0.5	-0.5
Oral expression	-0.6	-0.9	-1.1	-0.8	-1.3
Written expression	-0.6	-1.1	-1.7	-0.8	-1.6
Planning and organisation	-0.7	-0.8	-1.5	-0.7	-1.0
Technological and digital skills	-1.1	-1.0	-0.9	-0.7	-0.6
Ability to search for and manage information	0.0	-0.3	-0.6	0.0	-0.5

The overall education shortfalls identified are particularly evident in Sciences and Engineering

- Humanities has the smallest education shortfall of all the fields. However, technological and digital skills still fall short in this field and in Social Sciences.
- There is significant room for improvement in oral and written expression, English proficiency, and planning and organisation in Sciences and Engineering, which present shortfalls exceeding 2 points out of 10 in some cases. In Sciences, moreover, there are shortfalls in problem-solving and in creativity and innovation.

> Previous educational paths and further studies

Figure 58. Chart showing the flow of graduates from the field of knowledge of their bachelor's degree to the field of knowledge
of their master's degree in 2023 (only relationships involving 5% or more of the starting field)



Note: only 54% of respondents provided information about their bachelor's degree; the results are therefore purely indicative.

Master's degrees in Social Sciences welcome students from all fields of knowledge

- Humanities graduates change fields the most when it comes to pursuing a master's degree.
- In contrast, Social Sciences and Engineering graduates are the most likely to remain in the same field.

Figure 59. Trend in the percentage of graduates who do not pursue further studies (2014-2023)

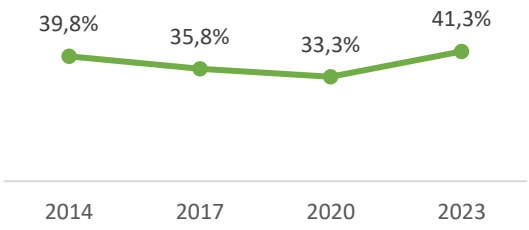


Figure 61. Pursuit of further studies three to four years after the master's degree (2023)

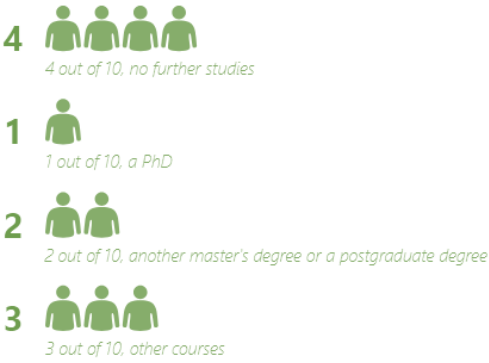


Figure 60. Percentage of master's degree graduates who go on to pursue a PhD, by field of knowledge (2023)

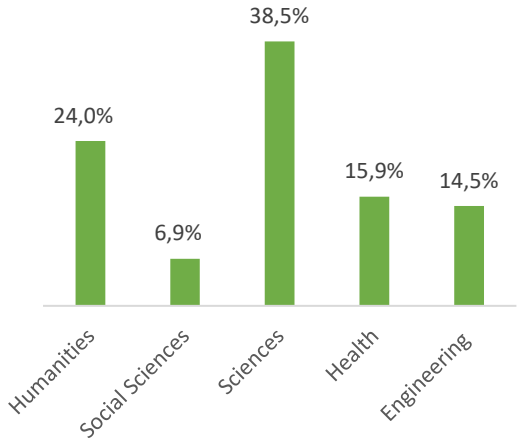
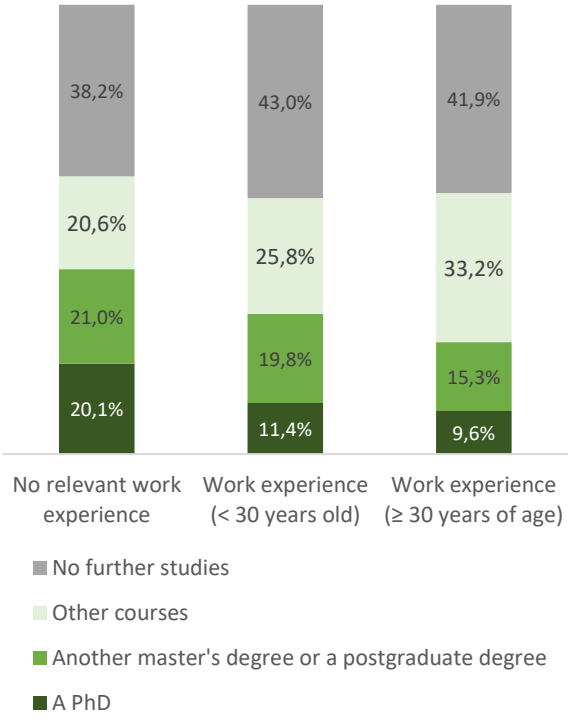


Figure 62. Pursuit of further studies according to employment history (2023)



Around 6 out of 10 master's degree graduates pursue further studies

- However, this proportion has decreased since 2020. Continuing education is clearly less common among the respondents in this survey.
- According to the 2023 data, 1 in 10 master's degree graduates have gone on to pursue a PhD, and 2 in 10 have enrolled in another master's degree or a postgraduate degree. Fewer graduates with previous work experience pursue formal studies after their master's degree and instead opt for other courses (courses related to their master's degree, language courses,

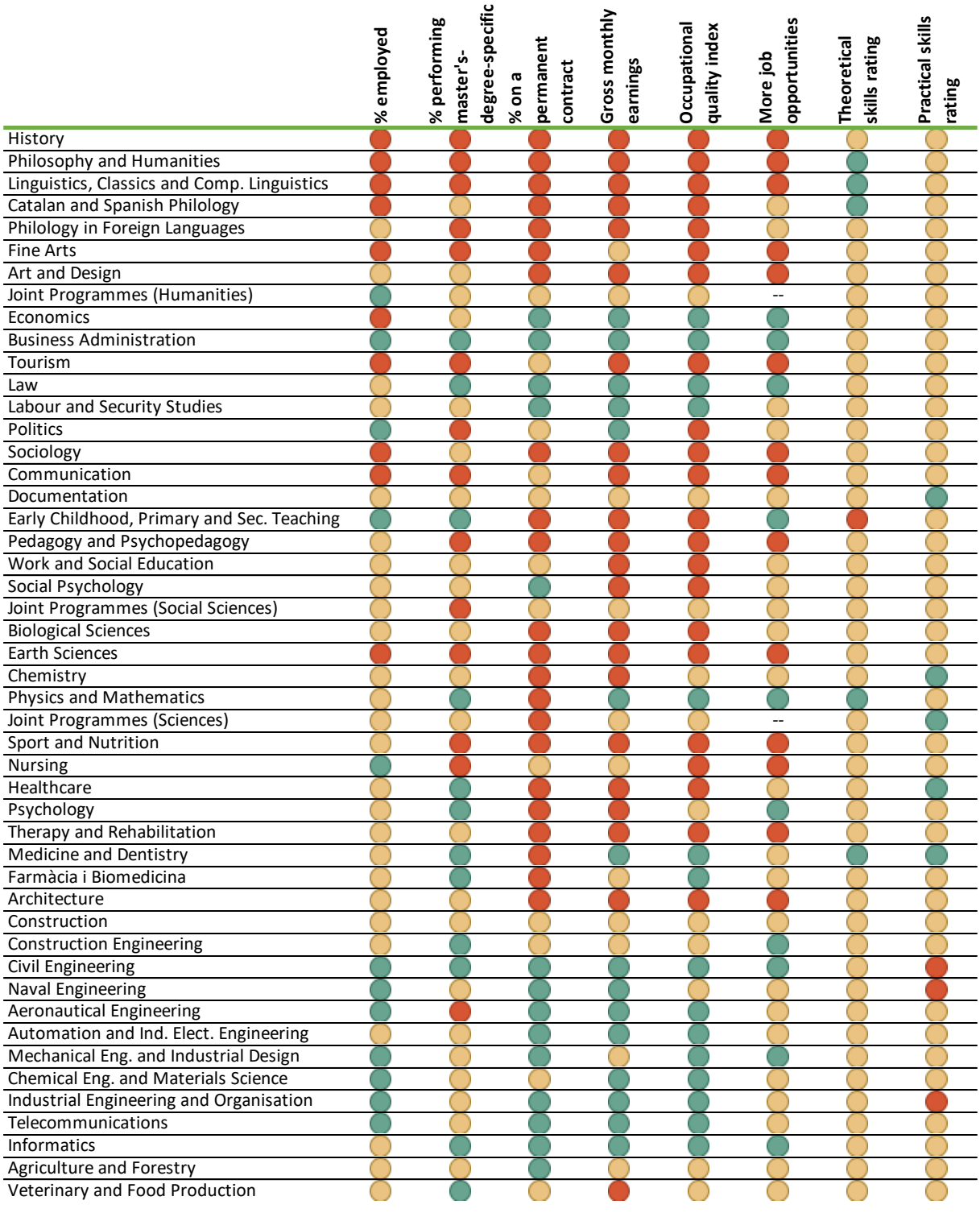
preparatory courses for competitive examinations, or IT courses). Meanwhile, 40% of master's degree graduates who move directly from one degree to the next (those with no work experience) go on to pursue further degrees in formal education.

- Master's degree graduates in Sciences are the most likely to pursue a PhD (almost 4 out of 10).

Detailed information on the subfields

> Significant differences between subfields

Figure 63. Comparison of employment indicators and quality of education by specific subfield (2023)[5]



> Occupational quality index (OQI) ranking

Figure 64. Specific subfield ranking ($n > 10$) according to the OQI in 2023 (unweighted)

Specific subfield	$\bar{x}$
Telecommunications	80.9
Electronic and Automation Engineering	79.9
Aerospace Engineering	79.0
Civil Engineering	79.0
Industrial Engineering and Organisation	78.1
Business Administration	77.8
Computer Science	77.6
Combined Degrees (Sciences)	76.8
Economics	76.4
Physics and Mathematics	76.2
Mechanical Engineering and Industrial Design	75.5
Building	75.4
Labour and Security	75.3
Chemical and Materials Engineering	74.8
Law	74.8
Medicine and Dentistry	74.5
Pharmacy and Biomedicine	74.0
Marine Engineering	73.9
Construction Engineering	73.0
Agriculture and Forestry	72.3
Chemistry	71.3
Veterinary Science and Food Production	71.2
Psychology	70.4
Information Science	69.6
Architecture	69.3
Nursing	69.3
Teaching: Education and Teacher Training	69.1
Political Science	69.1
Healthcare	69.1
Social Education and Work	68.5
Combined Degrees (Social Sciences)	68.2
Pedagogy and Educational Psychology	68.1
Sport and Nutrition	67.9
Biological Sciences	67.8
Therapy and Rehabilitation	67.6
Social Psychology	67.0
Communication	66.3
Catalan and Spanish Language and Literature	64.7
Foreign Languages and Literature	64.5
Linguistics and Classical and Comparative Studies	64.4
Philosophy and Humanities	64.1
Sociology and Geography	64.0

[5] The indicator represents the result of hypothesis testing for the difference in population means between two groups (the specific subfield vs. the remainder). We consider equality of population means as our main contrast or null hypothesis. Bootstrapping was performed with a confidence level of 95%. Absences of significant difference are shown in yellow, higher scores for the subfield are shown in green and lower scores for the subfield are shown in red.

Earth Sciences	63.5
Tourism	63.4
Art and Design	61.3
Fine Arts	57.1
History	56.1

> Subfield ranking according to graduates' satisfaction with their master's degree

Figure 65. Specific subfield ranking ($n > 10$) according to whether graduates would choose the master's degree again in 2023 (unweighted)

Specific subfield	%
Teaching: Education and Teacher Training	81.7%
Physics and Mathematics	80.3%
Medicine and Dentistry	79.2%
Labour and Security	78.4%
Economics	77.3%
Psychology	77.2%
Combined Degrees (Social Sciences)	76.3%
Law	76.2%
Agriculture and Forestry	76.2%
Electronic and Automation Engineering	75.4%
Philosophy and Humanities	75.1%
Information Science	75.0%
Healthcare	74.5%
Computer Science	73.7%
Combined Degrees (Sciences)	73.7%
Linguistics and Classical and Comparative Studies	73.4%
Civil Engineering	72.9%
Construction Engineering	72.7%
Social Education and Work	72.3%
Marine Engineering	72.2%
Business Administration	72.1%
Pedagogy and Educational Psychology	71.5%
Telecommunications	71.5%
Nursing	71.2%
Sociology and Geography	70.9%
Architecture	70.9%
Therapy and Rehabilitation	69.2%
Pharmacy and Biomedicine	69.2%
Political Science	67.4%
Catalan and Spanish Language and Literature	67.2%
Chemistry	66.5%
Aerospace Engineering	66.4%
Sport and Nutrition	66.3%
Foreign Languages and Literature	66.1%
History	65.8%
Chemical and Materials Engineering	65.8%
Veterinary Science and Food Production	65.8%
Social Psychology	65.2%
Industrial Engineering and Organisation	64.6%
Earth Sciences	63.3%
Fine Arts	62.5%

Communication	62.5%
Mechanical Engineering and Industrial Design	60.5%
Biological Sciences	58.8%
Building	56.8%
Art and Design	56.5%
Tourism	50.7%

Gender perspective

> Employment outcome differences by gender

Figure 66. Comparison of indicators by gender for each specific subfield (2023)[6]

	% employed	% performing master's-degree-specific functions	% on a permanent contract	% working full time	Gross monthly earnings	Job satisfaction	Occupational quality index
History		H				H	
Philosophy and Humanities	D						H
Linguistics, Classics and Comparative Linguistics		H					
Catalan and Spanish Philology	D			D			
Philology in Foreign Languages			D				
Fine Arts	D						H
Art and Design							
Joint Programmes (Humanities)		H	D		H	H	H
Economics		H	D				
Business Administration	H	H			H		H
Tourism							
Law			D		H		H
Labour and Security Studies		H			H		
Politics							
Sociology							
Communication					H		
Documentation			H	H	H		
Early Childhood, Primary and Secondary Teaching					H		H
Pedagogy and Psychopedagogy	H				H		H
Work and Social Education					H	H	H
Social Psychology					H		
Joint Programmes (Social Sciences)					H		
Biological Sciences		H				H	H
Earth Sciences			H				
Chemistry			D				
Physics and Mathematics	D						H
Joint Programmes (Sciences)							
Sport and Nutrition		H		D			
Nursing			H		H		H
Healthcare			D		H		
Psychology				H			
Therapy and Rehabilitation	H	H		H	H		
Medicine and Dentistry		H			H	H	H
Pharmacy and Biomedicine					H		
Architecture	H				H	H	
Construction			H		H	H	H
Construction Engineering	H				H		
Civil Engineering			D	D			
Naval Engineering			D	D			
Aeronautical Engineering		H		D		D	
Automation and Industrial Electronic Engineering							
Mechanical Engineering and Industrial Design							
Chemical Engineering and Materials Science							
Industrial Engineering and Organisation		D		H		D	
Telecommunications		H			H		H
Informatics			H		H		H
Agriculture and Forestry	H		H		H	H	H
Veterinary and Food Production					H		H

[6] The indicator represents the result of hypothesis testing for the difference in population means between two groups (women vs. men for each subfield). We consider equality of population means as our main contrast or null hypothesis. The t-test was performed with a confidence level of 95%. D = higher value for women; H = higher value for men.

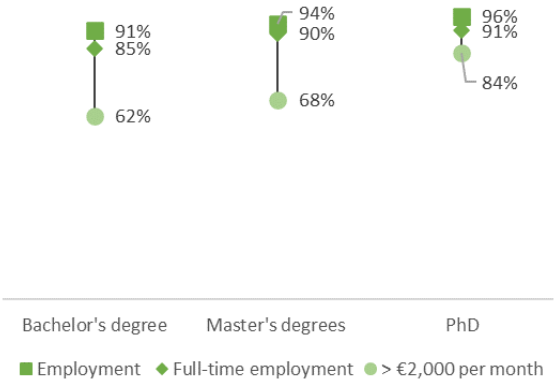
Of the statistically significant gender differences in employment, most favour men

- Within disciplinary subfields, there are many significant differences in favour of men.
- The indicator columns with the most subfields showing a significant difference in favour of men are job suitability and gross monthly earnings, as well as the occupational quality index, which partly depends on the other two.
- Most significant differences in favour of women are linked to a higher percentage of permanent contracts.

Comparison between levels of tertiary education

> Results by level of tertiary education

Figure 67. Employment rate, full-time employment and gross monthly earnings by level of tertiary education (2023)



Note: gross earnings are only calculated for graduates in full-time employment.

Figure 68. Functions performed at work by level of tertiary education (2023)

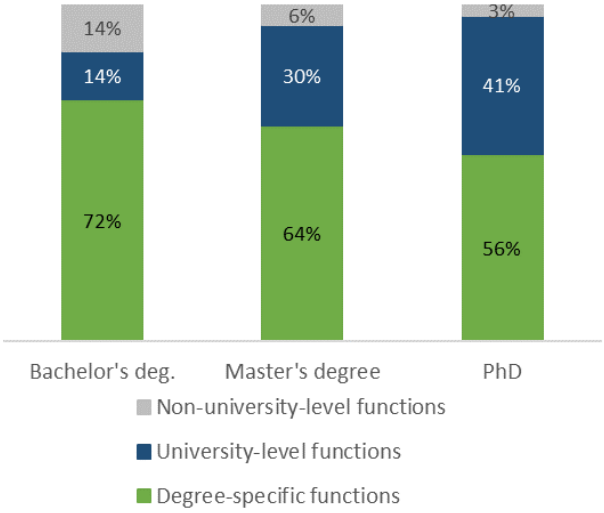
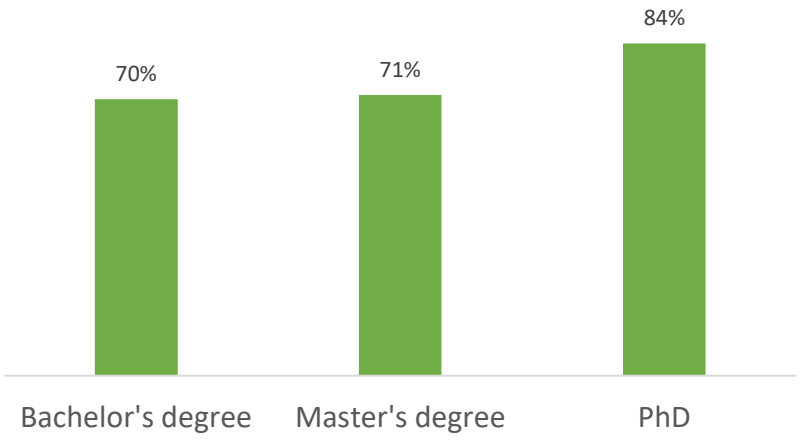


Figure 69. Percentage of graduates who would choose the same degree again by level of tertiary education (2023)



The higher the education level, the better the employment indicators

- This is true for the employment rate and gross monthly earnings. In terms of job suitability, while the proportion of graduates performing degree-specific functions decreases as the level of education increases, almost no one with a PhD performs non-university-levels functions.
- Similar proportions of graduates are satisfied with their bachelor's degrees and master's degrees, although this figure is considerably higher for doctoral graduates.

> Master's degrees that qualify graduates to work in a regulated profession

Figure 70. Employment and satisfaction results for graduates of master's degrees that qualify them to work in regulated professions, and comparison with non-qualifying master's degrees in the same specific subfield (2023)

	Qualifying master's degrees			Comparison with non-qualifying master's degrees in the same subfield		
	n	% performing master's-degree-specific functions	% that would choose the same master's degree again	*n*	% performing master's-degree-specific functions	% that would choose the same master's degree again
Legal Practice	821	70%	78%	214	65%	72%
Teacher Training	1,056	79%	83%	243	76%	77%
General Health Psychology	364	74%	78%	241	58%	76%
Architecture	159	72%	68%	154	53%	71%
Mining Engineering	13	56%	63%	123	75%	74%
Civil Engineering	106	73%	69%	27	84%	90%
Nautical Science and Maritime Transport Management*	17	64%	70%	1	--	--
Aerospace Engineering	85	51%	63%	67	47%	72%
Industrial Engineering	352	62%	57%	216	70%	73%
Telecommunications Engineering	144	66%	64%	217	61%	77%
Agricultural/Forestry Engineering	33	72%	78%	278	60%	77%
TOTAL	**3,150**	**72%**	**76%**	**1,784**	**65%**	**75%**

* This also includes the master's degrees in Management and Operation of Marine Energy Facilities, and Marine and Ocean Engineering.

Qualifying master's degrees are required for entry into regulated professions

- Generally speaking, a higher proportion of graduates of these master's degrees perform degree-specific functions, also when compared to the overall system average (64%).
- However, it should be noted that 1 in 4 graduates of these master's degrees do not perform degree-specific functions at work three to four years after graduation.
- Finally, as an exception, the master's degrees in Mining Engineering, Civil Engineering and Industrial Engineering show less job suitability and less graduate satisfaction than their non-qualifying counterparts.

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DATA SHEET

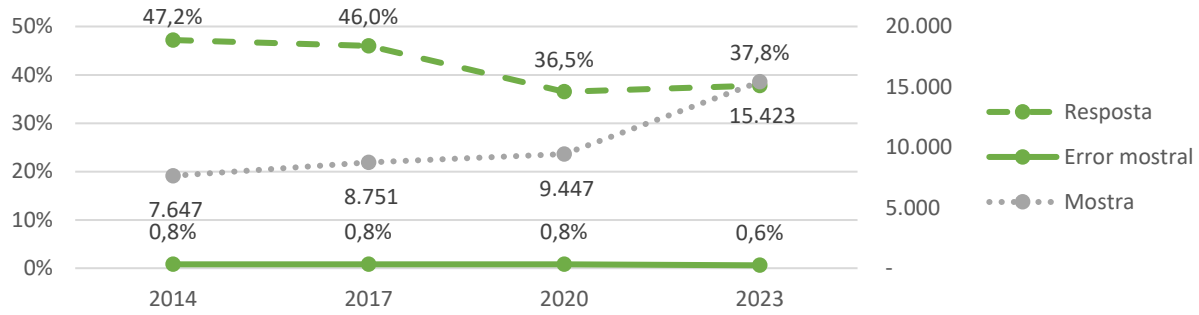
Survey of master's degree graduates

Population	People who graduated from an official university master's degree in the 2017-2018 and 2018-2019 academic years
Survey period	Fieldwork combining two survey methods: - online, from 09/11/2022 to 04/12/2022 (43% of the sample) - telephone, from 26/01/2023 to 24/03/2023 (57% of the sample)
Participating centres	UB, UAB, UPC, UPF, URL, UdL, UdG, URV, UOC, UVic-UCC, UIC, UAO CEU, 27 affiliated centres and three higher arts education centres
Weighting	The data from the 2023 employment outcomes survey presented in this report are weighted according to stratified sampling by specific subfield and sampling unit, unless otherwise stated

Population data and sample of master's degree graduates (2023)

	Population	Contactable population	Sample	Response rate	Sampling error
University of Barcelona	8,650	8,645	3,412	39.5%	1.3%
Autonomous University of Barcelona	5,012	5,010	2,210	44.1%	1.6%
Technical University of Catalonia	5,021	5,021	1,904	37.9%	1.8%
Pompeu Fabra University	3,638	3,636	1,325	36.4%	2.1%
Ramon Llull University	4,243	4,242	1,366	32.2%	2.2%
University of Lleida	1,162	1,162	611	52.6%	2.7%
University of Girona	1,096	1,096	584	53.3%	2.8%
Rovira i Virgili University	1,597	1,596	784	49.1%	2.5%
Open University of Catalonia	8,376	8,231	2,365	28.7%	1.7%
University of Vic - Central University of Catalonia (UVic-UCC)	1,002	1,002	399	39.8%	3.8%
International University of Catalonia	460	460	152	33.0%	6.5%
Abat Oliba CEU University	391	390	216	55.4%	4.5%
Higher arts education centres	262	262	95	36.3%	8.0%
TOTAL	**40,910**	**40,753**	**15,423**	**37.8%**	**0.6%**

Figure 71. Trend in the sample, response rate and sampling error of the master's degree surveys



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